ENGINEERING NEWS-RECORD

JAN. 15, 1959

PRICE 50 CENTS

CONTENTS ON PAGE 17

▶ Big bridges are a bargain in South Dakota p. 38

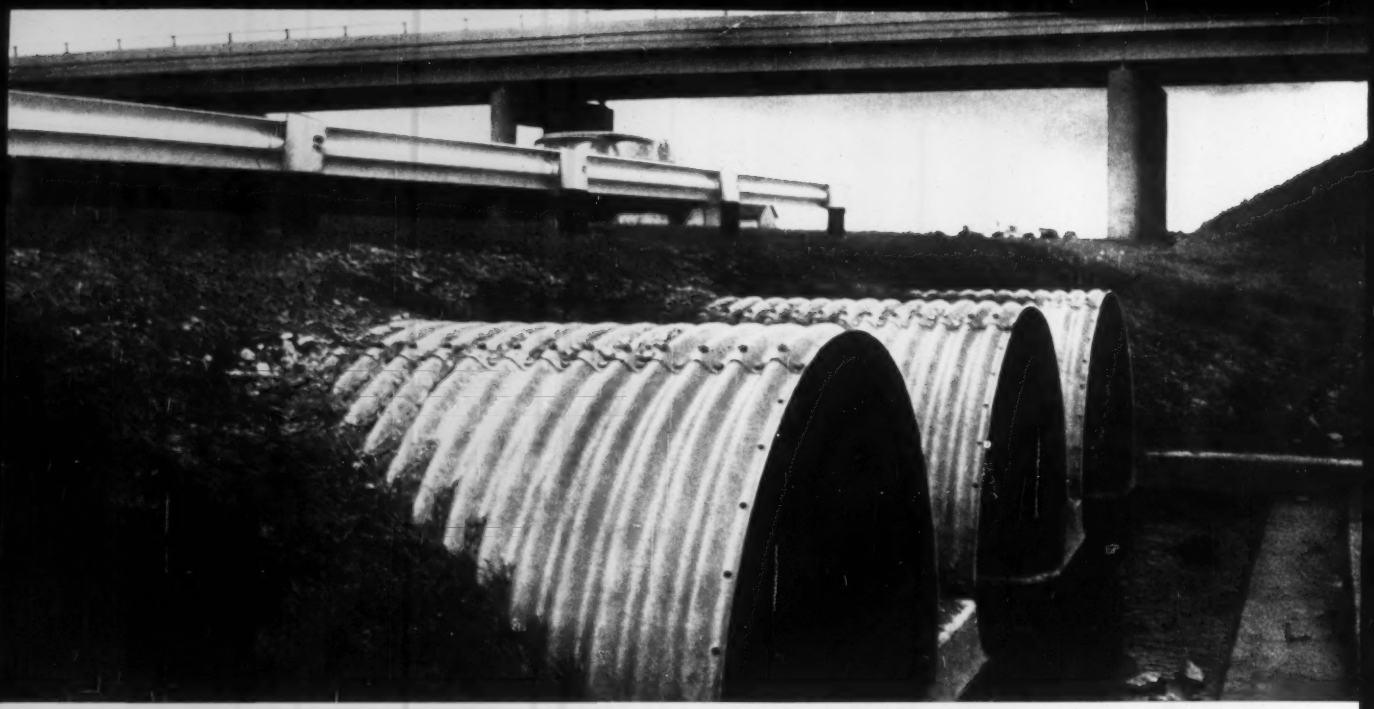
Coming:

INDUSTRIAL BUILDING UPTURN

page 21

A McGRAW-HILL PUBLICATION

STEVENS MICH
ANN ARBOR MICH



Three lines of Armco MULTI-PLATE® Pipe-Arch provide waterway for creek crossing new relocated freeway in Ohio.

Highway design is 50 years apart, yet . . .

Armco Drainage Pipe serves both relocated freeway and old highway

A relocated modern four-lane freeway now replaces the original 1907 highway. On both, Armco Corrugated Metal Drainage Structures were installed. The old road still carries local traffic, and the 50-year-old Armco Pipes are in good condition. On the new freeway, Armco Pipe again met all requirements.

This story is being repeated all over the country. *Proved durability* is influencing selection of Armco Drainage Structures for the country's newest highways, freeways and expressways.

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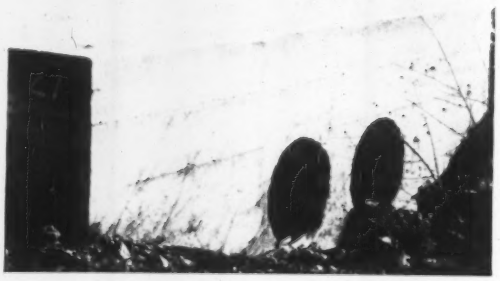

Taken in 1923, this photo shows twin Armco Pipes installed in original highway in 1907.

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FOUR Properly designed ROLL-AWAY moldboard gives faster and better oil mix, bigger loads on grading jobs.

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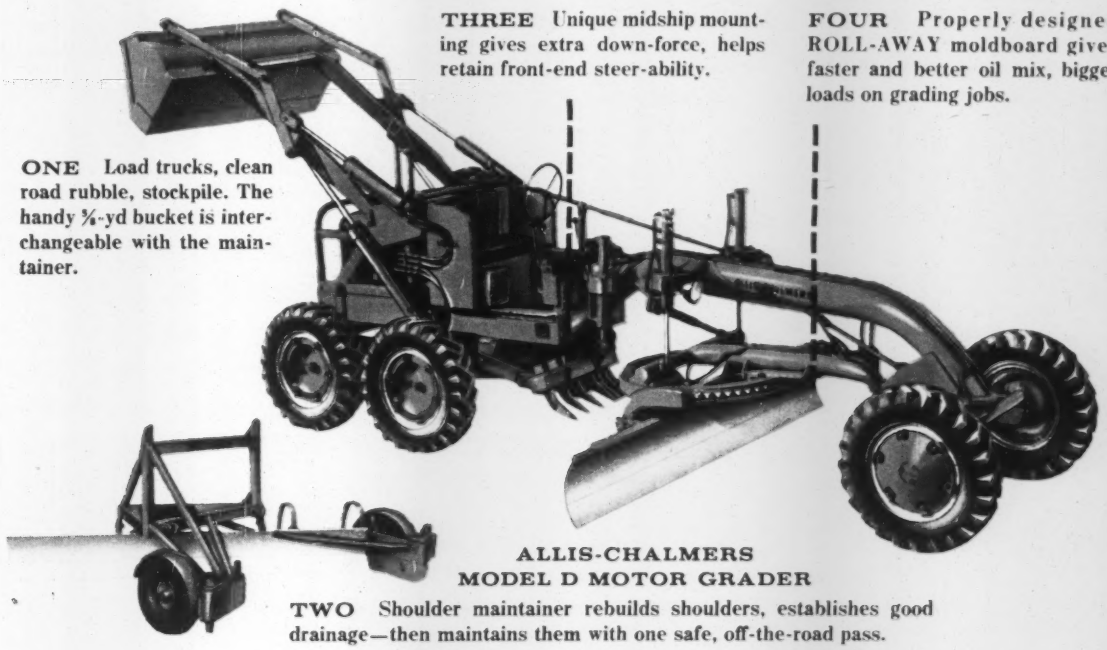

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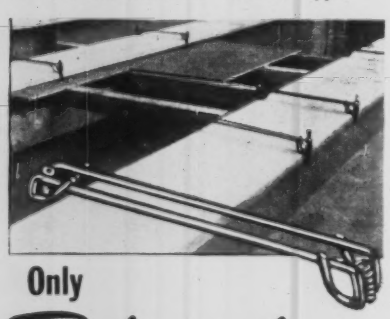

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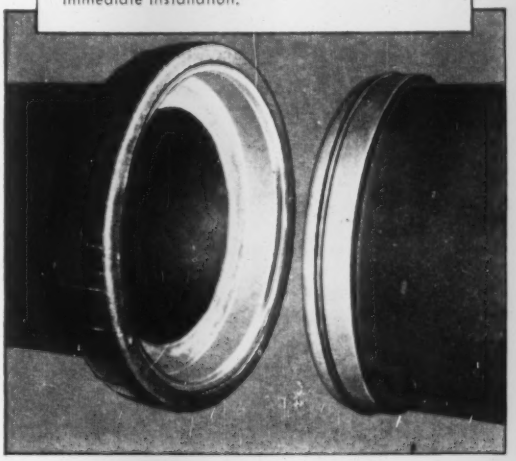

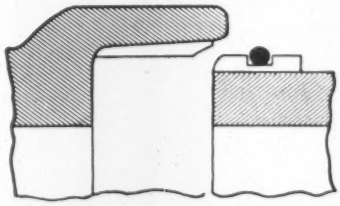

Fig. 1, Universal "**Uniflex**" Vitrified Clay Pipe before coupling.

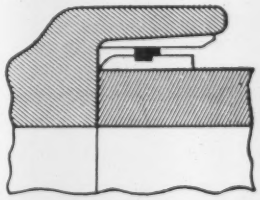

Fig. 2, As pipe is coupled, "**Uniflex**" compacts to form a water-tight seal on four sides of the Gasket.

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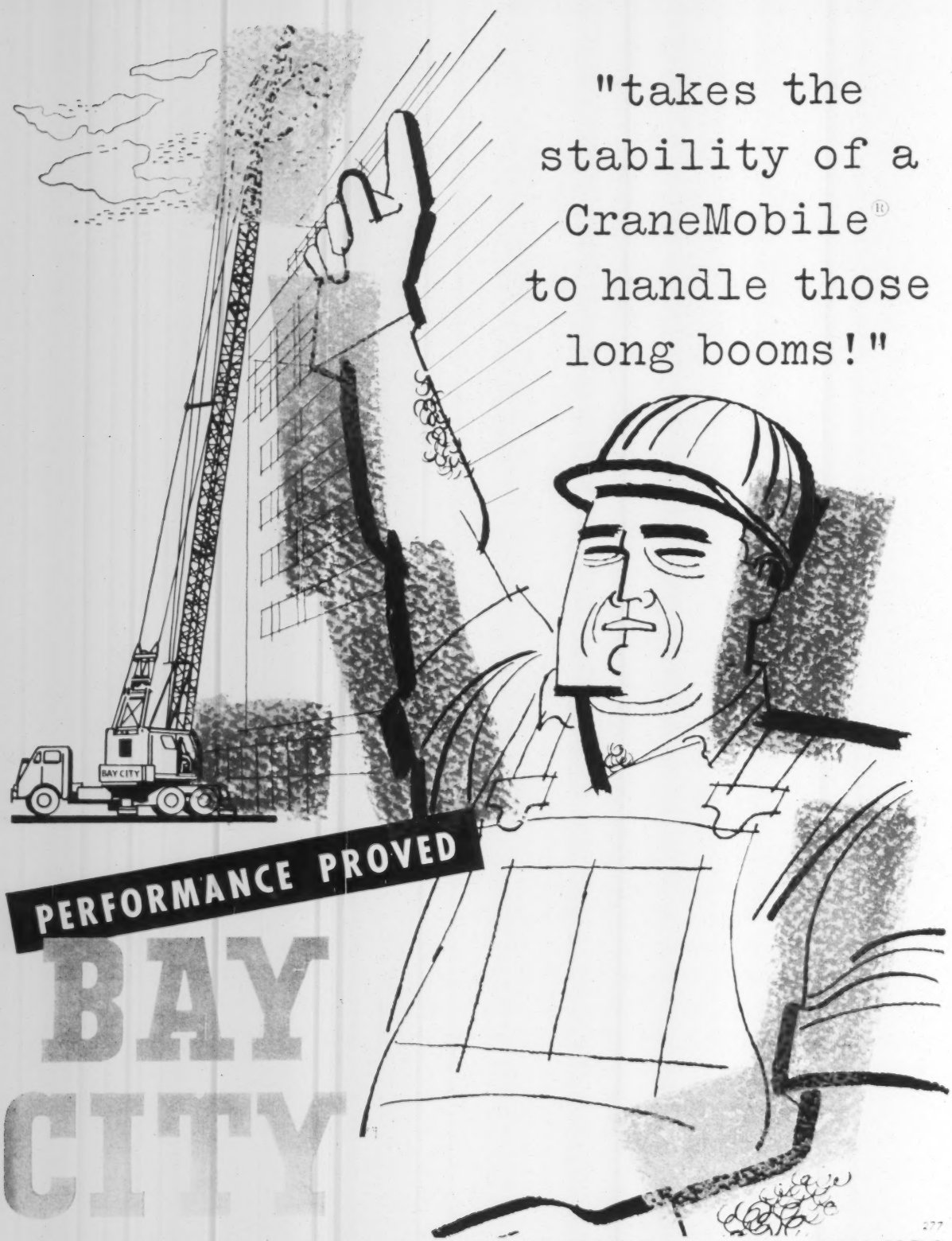

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Building With Light Metals

SIR—The subject of your editorial "Goal: Sheet-Metal Framing" (ENR Sept. 4, 1958, p. 132) relating to the prospective future use of light gage materials in structural design is one of increasing interest to engineers and architects.

Much progress has been made in the use of structural members formed from light gage steel during the past two decades. Your observation that the specification for the design of light gage cold-formed steel structural members developed under the sponsorship of the Committee on Building Research and Technology of American Iron and Steel Institute has been an important factor in that progress, is appropriate.

The extensive background of research which has gone into the development of that specification has been carried out continuously over the past 20 years and is still in progress. It has been done concurrently with, and is related to, development work in aircraft design. Thus, it is not correct, as the editorial implies, to assume that the recent investigation of the strength of a bridge fabricated from aluminum is a pioneer development in this sense.

It should be mentioned that many of the principal features of our design specification which distinguish it from design specifications presently used for conventional hot-rolled steel structural members are precisely those which it has in common with aircraft structural design. For example:

- Provisions for the adjusting of allowable stresses in thin-wall elements depending upon their width-to-thickness ratios to avoid local buckling.
- The concept of post-buckling strength and the use of effective widths for the design of stiffened elements.
- The techniques for increasing the strength of thin sheet by the incorporation of stiffeners.
- Provisions for the spacing of connectors (spot welds, bolts, rivets, etc.) in compression elements to avoid interconnection buckling of the thin connected parts.

The economical use of light gage steel in major structural applications has been a reality for many years and is not just a pious hope for the future. Light gage steel of ¼ inch thickness and less is being used in domes and arches having spans as great as 384 feet and for such occupancies as auditoriums, gymnasiums and industrial uses. Entire building structures, including structural framing, exterior walls, roof and floor structural systems and finish, are presently being fabricated from light gage steel and have been for many years.

It is perhaps true that engineers and architects have been slow in making imaginative use of the possibilities of light gage steel in structures such as domes and shells, bridges and other applications which might be considered unusual by old standards.

Modern metal coating and painting materials and techniques are now capable of furnishing corrosion restrictions once necessary due to this cause are now largely eliminated.

The use of high strength, corrosion resistant steels in the structural field is another application which holds great promise and which is closely associated with modern developments in aircraft and missile design. Undoubtedly, the influence of aircraft design experience will continue to accelerate the use of thin sheet materials in building applications beyond that which might have otherwise occurred. But the pioneering in this field was done many years ago and is not a new development.

W. K. KIRKLAND
American Iron and Steel Institute
New York City

Cofferdams at Kariba

SIR—It might interest you to know that on the Kariba Dam job (ENR Nov. 20, 1958, p. 30) both the first- and second-stage cofferdams were concreted by the pressure-grout method.

The preliminary cofferdam was constructed by excavating an 8-ft wide trench to a depth of 15 to 20 ft, filling with stone from the river bed and then grouting. One reason for adopting this method was to overcome the difficulties arising from the lack of access roads. The grouting plant was light and saved having to transport a considerably greater quantity of plant for conventional concreting.

The main cofferdam was pressure-

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The PIONEER AUTO-batch plant consists of two semi-portable units. The Drier Unit includes multiclone dust collector (most efficient of all mechanical types) mounted together with the drier on a single chassis.

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If your future plans call for bituminous work, it will pay you to learn how the new AUTO-batch plant will enable you to submit lower bids . . . and at the same time, help you make a nice profit.

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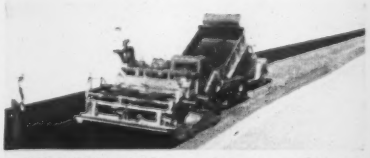

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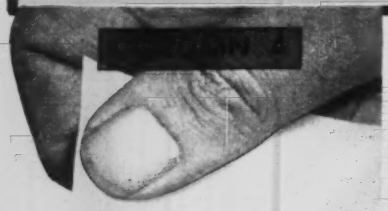
IF YOU'RE UNFAMILIAR WITH STANPAT

read column A and B



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grouted to overcome problems of underwater concreting. It was constructed by driving steel sheet piling on two concentric arcs of 175 and 155 ft radius. These were braced with a series of radial sheet piles forming 17 cells 20x20 ft in plan. Cells were filled with coarse aggregate and then grouted. Total volume of concrete placed underwater was 10,000 cu yd. Each cell was concreted continuously to completion. Shifts were arranged to meet this requirement.

A. A. Styner
President
Concrete Structures, Inc.
New York, N. Y.

Design Credit Omitted

Battery & Childs, Chicago engineer-architects, handled the general engineering of Union Tank Co.'s giant-dome railroad repair shop (ENR Nov. 13, 1958, p. 34). They were in charge of all field coordination and supervision.

For Your Calendar . . .

Canadian Construction Association, Queen Elizabeth, Montreal, Canada, Jan. 18-21.

National Association of Home Builders, Hotel Conrad Hilton, Sherman Hotel, and Chicago Coliseum, Chicago, Ill., Jan. 18-22.

American Road Builders Association, Materials and Services Division, Dallas Memorial Auditorium, Dallas, Texas, Jan. 19-22.

Associated General Contractors of America, Inc., Hotel Americana, Miami Beach, Fla., Jan. 19-23.

National Industrial Conference Board, Hotel Commodore, New York City, Jan. 22-23.

Associated Equipment Distributors, Hotel Conrad Hilton, Chicago, Ill., Jan. 25-29.

Association of Asphalt Paving Technologists, Brown Palace, Denver, Colo., Jan. 26-28.

American Society of Heating and Air Conditioning Engineers, Convention Hall, Philadelphia, Pa., Jan. 26-29.

National Crushed Stone Association, Americana Hotel, Miami Beach, Fla., Jan. 26-30.

National Plant Maintenance and Engineering Conference, Public Auditorium, Cleveland, Ohio, Jan. 26-28.

Society of Plastics Engineers, 15th annual technical conference, Hotel Commodore, New York City, Jan. 27-29.

20th Annual Convention of the Private Truck Council of America, Inc., Sherman Hotel, Chicago, Ill., Jan. 29-30.

National Bituminous Concrete Association, 4th annual meeting, Americana Hotel, Miami Beach, Fla., Feb. 2-6.

American Society of Civil Engineers, Hotel Statler, Los Angeles, Calif., Feb. 8-13.

Mason Contractors Association of America, ninth annual convention and 1959 show, Chase-Park Plaza Hotel, St. Louis, Mo., Feb. 15-18.

National Ready Mixed Concrete Association, Roosevelt Hotel, New Orleans, La., Feb. 15-19.

National Society of Professional Engineers, Dinkler-Tutwiler Hotel, Birmingham, Ala., Feb. 18-21.

American Concrete Institute, Statler Hilton Hotel, Los Angeles, Calif., Feb. 23-26.

National Council for Stream Improvement, Waldorf-Astoria, Astor Gallery, New York City, Feb. 23-25.

Second Annual Building Congress on Urban Renewal, National Housing Center, Washington, D. C., Feb. 26.

32nd Highway Engineering Conference, University of Colorado, Boulder, Colo., Mar. 5-6.

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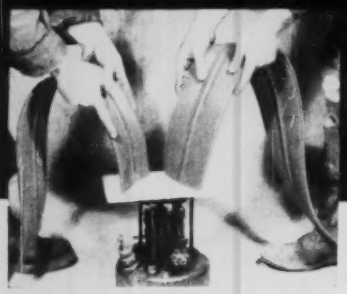

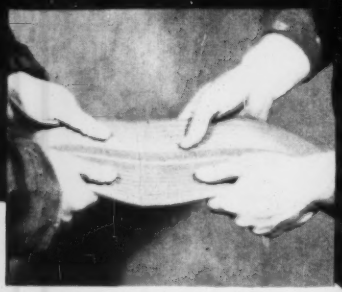

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ENGINEERING NEWS-RECORD

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CONTENTS

NATIONAL AFFAIRS

Coming: Industrial Building Upturn 21
Engineering News-Pictures 24
U. S. Dredge Off to Suez Canal 25
Engineer Earnings Climb Steadily 25
Battle Over the Billions Starts 26
Broader Outlook Urged for Road Men 27
What U. S. Will Build in Russia 28
Politics Force Out 'Non-Political' Road Boss 28
Masonry Dam Crumbles in Spain 28

FEATURES

Germans Rush $15.5-Billion Road Program 30
Big Bridges Are a Bargain in South Dakota 38
Assembly Line Cuts Costs for Homebuilders 48

RESEARCH

New Ways to Cure Sawed Joints 51

NEW PRODUCTS

Hydraulic Crane Cuts Maintenance Costs 53
125-Lb Butterfly Valves Come in New Range 53
Concrete Curing With Dry, Fireproof Powder 53
Light Conduit Bender Puts Speed Into a Job 53
Glass-Fiber Water Tank Is Centrifugally Molded 54
Paint Puts Permanent Marks on Steel Sections 54
Diesel Engines Offered in Tractor Line 54
Manufacturers Publications 58

MEN AND JOBS

University Honors Guy H. James 60

BUSINESS AND FINANCE

Credit Executives Urge Less Retainage 102
Two Industrial Parks Proposed 102
Machinery Prices Go Up 106
Refinery Start Up to the Judge 106
Machinery Orders Dip Slightly 106
'Will-Fit' Parts Makers Organize 108
Another Record Set in 1958 108
Kaiser Wins Brazilian Steel Plant Contract 108

LABOR

Law Will Tighten Grip on Hoffa 110
NLRB Defines New Standards 112
Jobless Pay Plans 114

Reader Comment ... 6
Calendar 10
Washington Observer 19
Obituaries 66
Unit Prices 69
Materials Prices ... 70
Construction Reports 73
Statistics, Indexes ... 101
Editorials 124

Back issues of ENGINEERING NEWS-RECORD *are generally available for the previous six months. Semi-annual indexes will be sent on request.* ENGINEERING NEWS-RECORD *is also indexed in Industrial Arts Index and Engineering Index.*

THE CONSTRUCTION WEEK

FIRE TRAGEDY BRINGS ACTION—Look for Chicago to allocate millions of dollars this year to make its schools fire-safe. Among the likely changes: Installation of automatic sprinkler systems in all schools; total enclosure of stairwells; connection of school alarms with fire department alarms. These were among recommendations made by a coroner's jury that investigated the city's recent Catholic school fire that killed 90 children and three nuns.

WORK IN CUBA TO GO ON—"We will continue public works, regardless of what nature they may be," says Fidel Castro, victorious Cuban rebel leader. Revolutionary leaders say foreign-owned industry will not be nationalized. But, says new President Manuel Urrutia, "Those who invest money in Cuba, Cubans and foreigners alike, must do so on the understanding they are investing in the welfare of the Cuban people."

ICE WATER MEANT NO WATER—The 25,000 residents of North Tonawanda, N. Y., had to make do with bottled water and melted snow for two days last week when ice slush in the Niagara River blocked the intake of the water supply filtration plant.

PUBLIC WORKS BOOMS ALONG—Public construction awards, which whirled into 1959 at a fast pace, are now moving even faster. State and local contracts averaged $120 million per week during this year's first three contract weeks, a heady 41% more than in 1958. Federal awards, averaging nearly $50 million per week, are at the highest rate since mid-1958.

SUPER GOVERNMENT PROPOSED—New York City's Regional Plan Association, a citizen group, proposes official status for the Metropolitan Regional Council. The council is an unofficial group of some 30 government officials representing cities and counties in three states. The plan would require legislation in New York, New Jersey and Connecticut.

ARM OF THE LAW GROWS LONGER—Draftsmen, fieldmen, clerks and stenographers employed by architectural and engineering firms are now subject to the Fair Labor Standards Act. The U.S. Supreme Court this week said their work on interstate projects is so "intimately related" to interstate commerce as to give them minimum wage and overtime protection of the law.

"SAVE OUR CAPITOL!"—North Carolina architects are up in arms over a proposed temporary, wood-and-glass addition to the 118-year-old state Capitol. The $5,000, 10x36-ft structure, to be erected on the second floor patio, will be used as a newsroom while the 1959 legislature is in session. One architect says, "It would be like hanging a calendar on the Mona Lisa."

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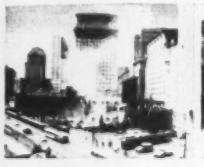

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WASHINGTON OBSERVER

- Increase planned in Titan missiles?
- Labor wants bigger voice on atom policies
- Seek higher duties on Japanese plywood
- Will labor rift be mended?

● **Pentagon rumors have it that the Air Force plans a seven-squadron increase in the Titan ICBM program.** Current plans call for construction of no more than four Titan bases in all. First Titan bases are likely to be at Forbes AFB, Kan., and Lowry AFB, Colo., Air Force specifications provide for hardened—that is, underground—bases for the Titan liquid-propellant missile.

If these reports turn out to be true, this means no more than nine ICBM bases—for Atlas missiles—will be above ground. This would mean a much quicker shift to underground ICBM bases than current plans call for. No Pentagon decision on this is expected soon; it may not be known until later this year.

—

● **Now that the atom is moving into the industrial field, organized labor wants a bigger say on government atomic policies.** Accordingly, an atomic energy technical committee has been organized under the AFL-CIO's Industrial Union Department.

It's expected to push for a vigorous federal reactor program. But perhaps more important, it wants tighter safety standards for protection of workers in plants where radioisotopes are used. And the committee is convinced that state workmen's compensation laws are inadequate—that a federal statute or even an international agreement may be necessary.

—

● **A second try for stepped-up import protection from Japanese competition is being made by domestic hardwood-plywood producers.** The industry has asked the Tariff Commission to grant new escape clause relief in the form of higher duties on imports of so-called "market" plywood, that is, plywood sold on the open market as an end product for consumption, and not used in construction of other products.

Imports of market hardwood-plywood have increased more than a third since 1955. That's when the commission turned down the domestic producers' first request for import protection on both market and "captive" plywood, used for further manufacture. The present duty on most hardwood-plywood now ranges between 15-20%. The commission will open hearings on the appeal next April 14.

—

● **Washington is looking toward the building trades meeting in Miami beginning January 26 for evidence on how the craft unions will attempt peace over jurisdiction.** The meeting precedes the AFL-CIO Executive Council meeting in San Juan, Puerto Rico, by two weeks.

At stake: Solving the dispute between the industrial unions and the metal trades, backed by building trades, over organizing. Also, the case against carpenters president Maurice Hutcheson may get previewed before he goes before the federation council. UAW president Walter Reuther is threatening to attempt to throw Mr. Hutcheson off the federation council unless he shows up in San Juan to be tried on alleged highway land fraud in Indiana.

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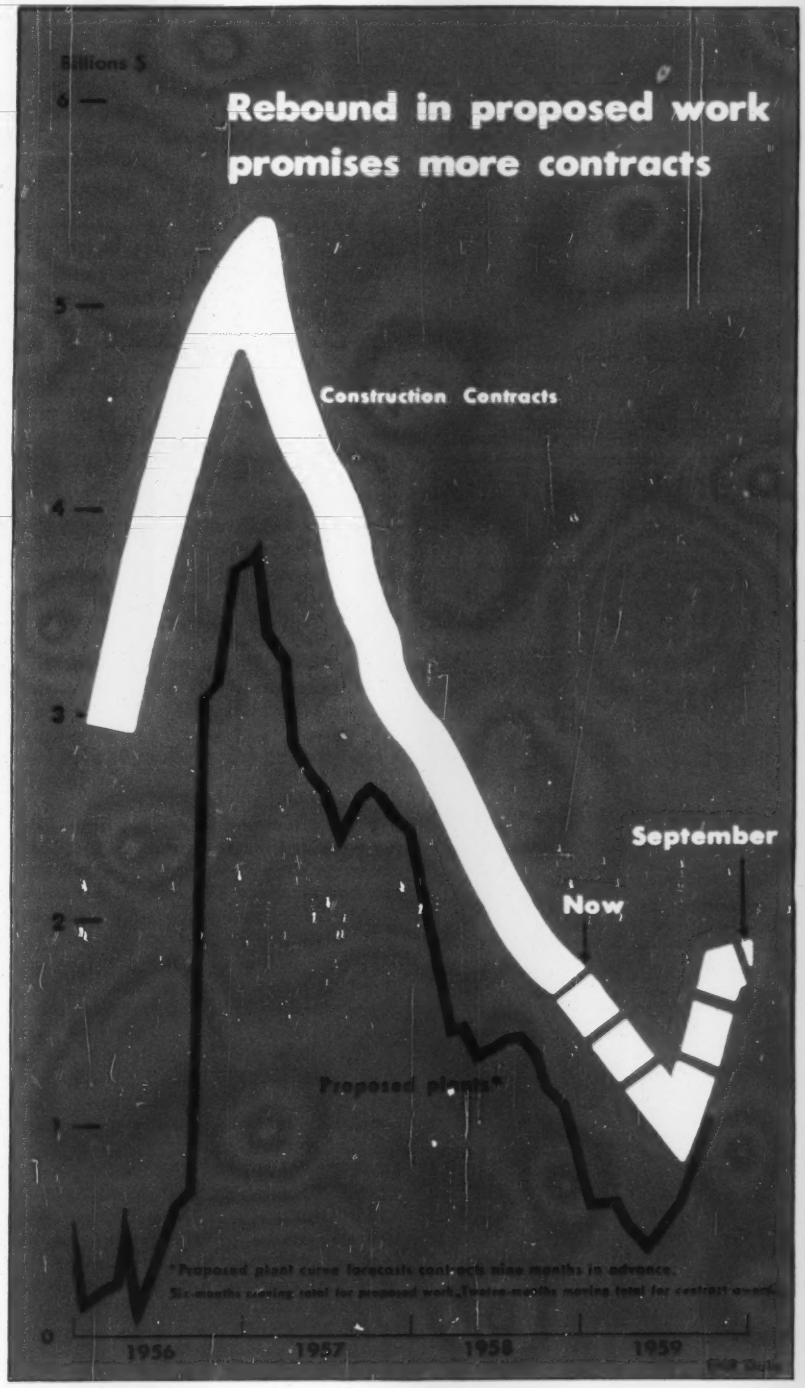


A sleeping giant is stirring in the heavy construction market—industrial building.

Engineers and architects are the first to discover it. And it won't be long before contractors and suppliers notice that this type of work is coming to life.

Springboard for this year's rebound in plant construction awards is the increasing volume of projects entering the planning stage. This upturn started last October. In that month proposed industrial building projects reported by ENR jumped to double the low average volume during the April-September period (ENR Nov. 27, 1958, p. 81).

A big surge of new industrial plants on the drawing boards came last month. ENR reported new plants proposed with an estimated total cost of $495 million. This was the largest volume of proposed industrial construction since November 1956, and three times the October and November 1958 totals. The totals in these two months were twice as large as the April-September slump in proposed plants.

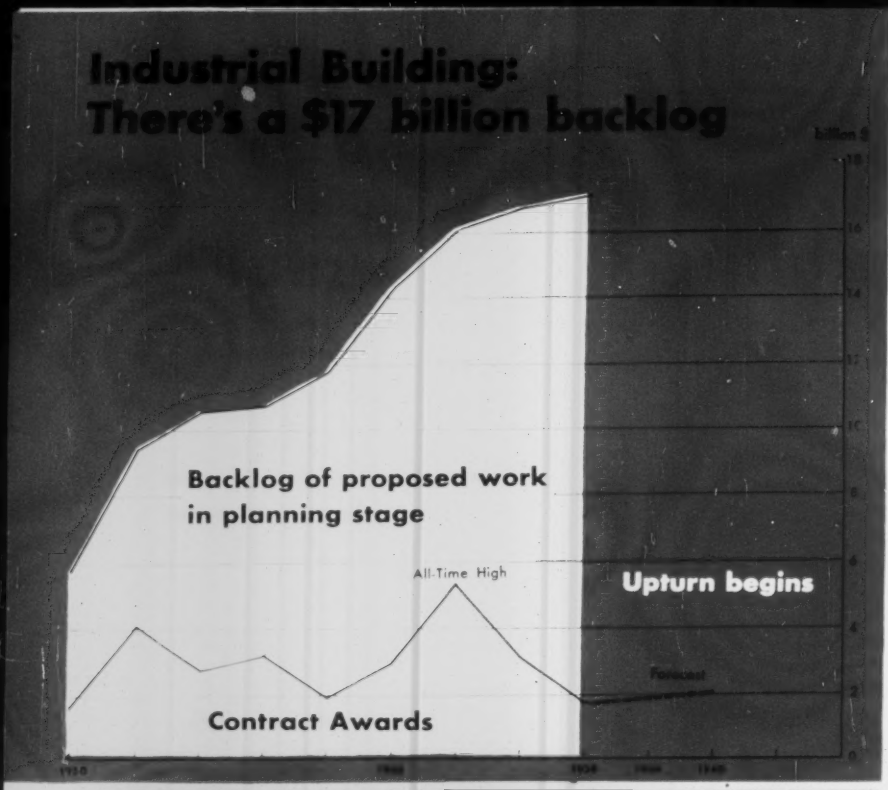
The three-month recovery in the rate of industry plans for new projects is the first concrete indication that the 30-month slide in industrial building contracts will soon end.

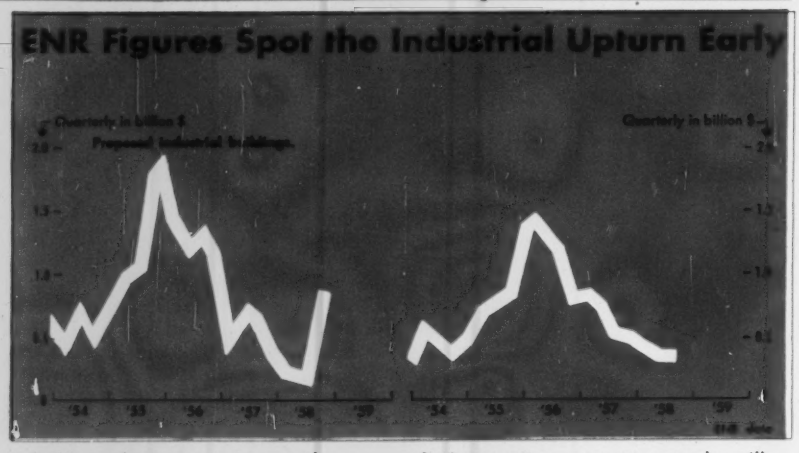
The amount of increase, however, will depend on businessmen, and probably many of them have not yet reached a final decision on 1959 construction budgets. The history of industrial construction shows an upswing spreads quickly within an industry and throughout industry in general. An upturn often feeds on itself.

The 1959 rebound will set the stage for an even faster rate of expansion in 1960. On this basis, ENR forecasts that 1960's industrial building contracts will climb to $2.1 billion—20% above this year's predicted total.

It's well known that industry now has much greater production capacity than is being used. But it is not as well known that industry plans more plant construction than ever before in history. Many of these projects were allowed to coast through the planning process or contracting plans were deferred because of the 1958 recession.

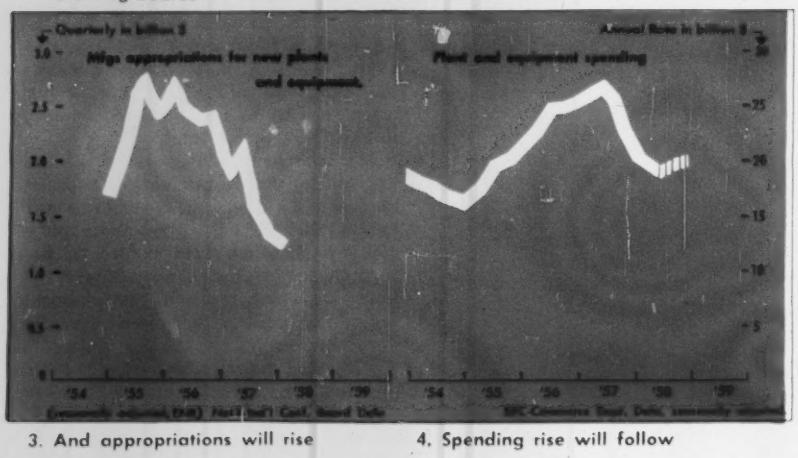
Proposed industrial buildings in the planning stage as of December 31, 1958, add up to a total estimated cost of $17.1 billion, according to ENR's monthly





1. More plants are going on the drawing boards

2. Construction contract awards will rise soon



3. And appropriations will rise

4. Spending rise will follow

backlog figures. This is an all-time high, and represents a $500-million rise during the final three months of 1958.

Impact of this huge amount of planned work on future industrial building contracts could be explosive. Reason: There is 10 times more industrial building construction in the planning stage than there was put under construction contract during 1958 (see chart, page 22). The total current backlog of proposed plans is also more than three times the 1956 record for industrial building contracts.

Economic and financial facts favor an upturn. Corporate earnings have been climbing for several months. By last October, new orders climbed well above their 1958 lows, particularly in the hard goods industries. These signals of greater liquidity of corporations and rising sales are encouraging producers to initiate plans for new facilities.

Although the immense backlog is potentially explosive, there is no indication right now that the big blast will occur in 1959. Two industrial building booms within the last eight years added enough capacity to the steel, cement, glass, plywood, aluminum and machinery industries to accommodate the expected rise in demand this year.

The need for additional capacity is growing constantly in other ways: existing plants must be replaced by more efficient ones; new plants must be more strategically placed to match market growth trends in various regions of the country (see table).

What will the upturn amount to? ENR forecasts that 1959 industrial building contracts will climb at least 5% above 1958 figures. This would be a total for the year of close to $1.9 billion. (ENR figures screen out industrial buildings under $110,000.)

From a low of $30 million in awards per week in the last six months of 1958, contracts should go into a weekly average rate of about $40 million per week by May. This would be an increase of 33% over the current low rate. The May date is based on timing. It takes about six months for an increase in proposed plant construction to show up in contract awards.

The full impact is usually felt within nine months. The chart on page 21 has this lead built in by plotting the proposed curve nine months in advance of the contract trend. A six-months moving total is used for proposed plants; 12-months moving total for contracts.

The upturn in proposed plant work will take several months to show up in industry's spending for plants and equipment. As contracts perk up, capital appropriations should reflect the rise, but it will be months later before increased payments on construction contracts bolster the capital spending totals.

How Industrial Building Market Is Shifting

Region	Dollar Value, Millions				Per Cent of U.S. Total			
	1951	1956	1957	1958	1951	1956	1957	1958
U.S. Total								
Contracts	$4,124	$5,335	$3,081	$1,756	100%	100%	100%	100%
Backlog	9,400	16,139	16,774	17,075	100	100	100	100
New England								
Contracts	107	181	235	153	2.6	3.4	7.6	8.7
Backlog	386	454	423	538	4.1	2.8	2.5	3.2
Middle Atlantic								
Contracts	763	989	458	294	18.5	18.5	14.9	16.7
Backlog	1,388	2,692	2,869	2,743	14.8	16.6	17.1	16.1
South								
Contracts	794	895	429	302	19.2	16.8	13.9	17.2
Backlog	1,351	3,195	3,502	3,665	14.4	19.8	20.9	21.5
Middle West								
Contracts	1,001	1,626	1,055	364	24.3	30.5	34.2	20.7
Backlog	2,541	3,656	3,556	3,558	27.0	22.7	21.2	20.8
West of Miss. R.								
Contracts	1,083	941	597	391	26.3	17.6	19.4	22.3
Backlog	2,903	4,401	4,412	4,565	30.9	27.3	26.3	26.7
Far West								
Contracts	376	703	307	252	9.1	13.2	10.0	14.4
Backlog	831	1,751	2,011	2,006	8.8	10.8	12.0	11.7

States in Regions

New England: Me., N.H., Vt., Mass., R.I., Conn.

Middle Atlantic: N.Y., N.J., Pa., Md., D.C., Del.

South: Va., W.Va., N.C., S.C., Ga., Fla., Ala., Miss., Ky., Tenn.

Middle West: Ohio, Ind., Ill., Wis., Mich.

West of Mississippi: Minn., Iowa, Mo., Ark., N.D., S.D., Neb., Kan., Okla., Tex., Mont., Wyo., Colo., N.M.

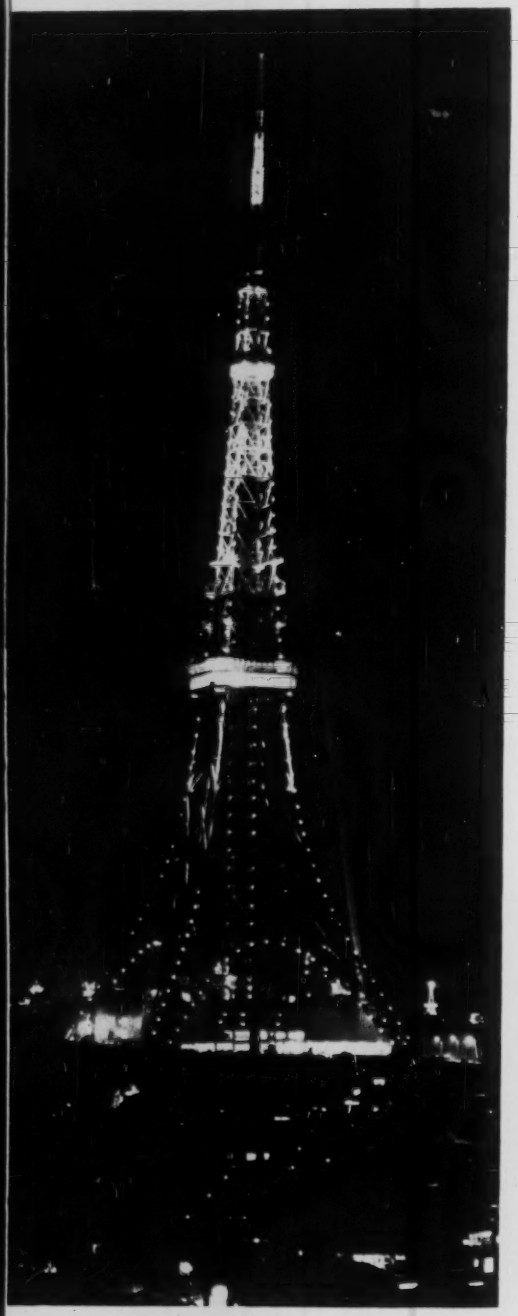
Far West: Idaho, Utah, Ariz., Nev., Wash., Ore., Calif.

Process Plants Top the Industrial Market

Industry	Dollar Value, Millions				Number of Contracts			
	1951	1956	1957	1958	1951	1956	1957	1958
U.S. TOTAL	$4,124	$5,335	$3,081	$1,756	2,937	2,586	2,147	1,649
Process industries	1,450	1,786	1,084	623	651	549	496	332
Public utilities	737	1,201	778	493	126	150	113	93
Metal refining & rolling	863	927	226	133	76	55	35	25
Machinery and parts	492	484	423	125	586	537	435	253
Food	81	156	148	115	286	319	220	267
Automotive service	43	37	47	34	211	121	97	82
Radio, TV, Electronics	62	17	40	30	27	25	40	30
Aircraft	118	162	75	23	45	79	71	42
Automobile	75	288	52	12	24	28	13	7
Wood products	9	31	9	8	47	26	24	24
Railroads	22	17	9	5	54	22	14	11
Textiles, excluding rayon	29	7	3	4	79	19	15	13
Refrigeration & cold storage	2	1	1	2	10	4	7	9
Foundries	5	7	2	1	28	10	9	3
Other	134	213	183	148	687	642	558	458

Data: ENR reports

Engineering News-Pictures



They're All Lit Up in Tokyo

Yes, Tokyo, not Paris. It's the recently opened Tokyo TV tower (ENR Nov. 6, 1958, p. 27). Reaching 1,089 ft into the air, it tops the Eiffel Tower by over 100 ft. The tower, owned by the Nippon Television City Co., had an estimated 20,000 visitors during its first two open days.

Clean-up Men Go 'On the Wagon'

Clean-up crews on a new Pittsburgh, Pa., sewer job found 48-in. dia. pipe too confining for hand-carrying of tools and materials so they got a little red wagon. Dravo Corp., Pittsburgh, contractor for portions of the system, found the cleaning job was too brief to justify installing tracks and mine cars.

Overpass Breaks 30-Year Snarl

A $4-million lakefront overpass in East Chicago, Ind., opened to traffic last month. It breaks a bottleneck which for 30 years has snarled traffic between East Chicago and Inland Steel Co. mills along Lake Michigan. The six-lane viaduct spans 13 railroad tracks. It's a gift to the city from Inland Steel Co. and four railroads. Inland gave $3.8 million, the railroads gave the rest.

Dual-Dual' Highway

Chicago's 14-lane road gets two dividers, rapid transit

A five-mile, $110-million expressway featuring 14 traffic lanes in a "dual-dual" design will be built in Chicago by 1962.

The expressway will be unique in U. S. road work. As a unit it will consist of two complete single-directional, dual roadways separated by rapid transit facilities.

The 14 high-speed traffic lanes will run from 26th St. to 47th St. on the city's South Expressway. There will be 10 lanes between 47th St. and 67th St.

In the 14-lane segment, there will be seven lanes in each direction—four for the inner expressway and three for the outer "collector" expressway.

Ramps between cross streets and the collector lanes will be provided every half mile, and connections between outer and inner expressways will be built about every mile and a half, according to present plans.

The major advantage of the design, according to Roger F. Nusbaum, state expressways engineer, is its ability to simplify "marginal turbulence" problems that develop as drivers change speeds and weave in and out to enter and leave the expressway.

In case of accident, he says, traffic can be detoured with a minimum of jamming.

The plan is the first of its kind to get federal backing. Part of the cost will be paid for on a 90:10% ratio by interstate highway funds. About $5 million will come from the city. The city's share will build facilities for Chicago Transit Authority trains in the median strip.

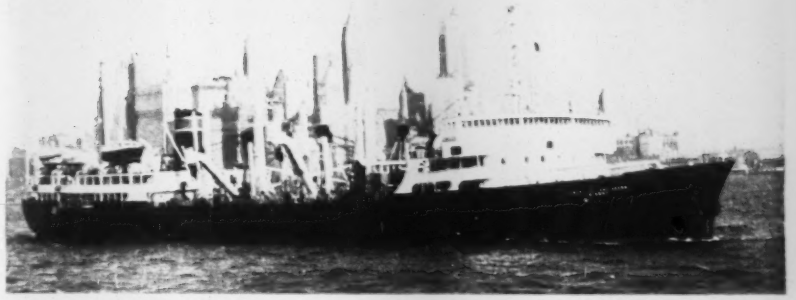
The segment qualifies for federal aid because the strip will be part of interstate Route 90, which runs from Seattle to Boston, and interstate Route 94, which runs from Billings, Mont., to Detroit.

The first bridge contracts on the project probably will be let late in 1959, grading and paving contracts in late 1960.

Four Construction Firms In Joint Shipbuilding Job

Four heavy construction companies are joint venturers in a shipbuilding operation for American Export Lines.

Morrison-Knudsen Co., Inc., Boise; Henry J. Kaiser Co., Oakland; Macco Corp., Paramount, Calif. and Frank E. Young Construction Co., San Diego, are joining with National Steel & Shipbuilding Corp., San Diego, apparent low bidder at $43.4 million for four cargo-passenger ships.



United Arab Republic is leasing this dredge for $240,000 a month.

U.S. Dredge Off to Suez Canal

The world's largest hopper dredge has been leased to the United Arab Republic's nationalized Suez Canal Authority. It will be used to deepen the Mediterranean approaches to the canal.

The $11-million "Essayons" operates like a giant vacuum cleaner. It will remove over one million cu yd of material a month.

The UAR leased the ship for six months at $240,000-a-month. To operate the dredge, the U. S. is sending 125 men—three complete shifts.

The Essayons operates 24 hours a day. Two 90-ft-long, 40-ton arms are lowered from its sides to suck up 7,000 tons of material an hour.

Moving at a speed of 3 mph the Essayons can dredge a passage 1 ft deep, 16 ft wide and 2½ miles long on one trip.

The material is deposited in twelve 20x45-ft bins amidships and then dropped through the ship's bottom in deep water.

The hoppers have a combined capacity of 8,000 cu yd, equal to some 12,000 tons of sand.

The Corps of Engineers is rescheduling the operations of 14 other sea going dredges to maintain work in East Coast harbors during the absence of the Essayons. The operation at Suez is expected to take about six months.

Engineer Earnings Climb Steadily

Earnings of graduate engineers continue to improve by about 6½% each year.

The median in 1958 was $8,750, up 13% over the median figure for 1956. And the 1956 figure of $7,750 was 19% better than the $6,500 figure found in 1953.

These are findings of a new Engineers Joint Council study, "Professional Income of Engineers."

EJC's Engineering Manpower Commission studied earnings of 190,810 engineers, a larger sample than it had in 1956 or 1953. It found the trend still upward at a steady 6½% annually for the median of all engineers—in industry, government and education.

The report points out that while engineer earnings rose 13% from 1956 to 1958, the Consumer Price Index went up 1.5% and Average Gross Weekly Earnings for Production (Manufacturing) climbed 10%.

Within the study's industry-government-education breakdown there are categories in which some of construction's engineers can be identified. For example, the median for all engineers in a "design services and construction" category of industry is $8,950—better than the $8,750 median for all engineers and better than the $8,800 median for all engineers in industry.

Median earnings for engineers in government is $8,950. Some 40% of all civil engineers are employed in government, if the membership of the American Society of Civil Engineers is representative.

The higher median earnings in government are explained by longer tenure of the average government employee. Industry has attracted a large share of younger employees since World War II. (Median age of all engineering degree-holders in the U. S. has been reported as 34-35 years).

Average starting salary for engineers hit $5,850 in 1958—$5,925 in industry and $5,350 in government.

Of the 190,810 engineers surveyed, 3,313 were earning more than $20,000 annually; 1,530 were earning less than $5,000.

The survey found a general improvement in government salaries. But they still lag behind industry's pay.

"Professional Income of Engineers," is available at $3.00 per copy from the Engineering Manpower Commission, 29 W. 39 St., New York City.

Battle Over the Billions Starts

- **Big construction money rests on the fight between Congress and the President. Goals laid out in the State of the Union Message are now under attack.**
- **Basically, Democrats want to spend more; the Administration, less. Democrats have the votes in Congress; the Administration has the veto.**

The austere Administration program for 1959 laid out in the traditional State of the Union Message by President Eisenhower last Friday is running into strong Democratic opposition. And many in his own party are doubtful the President will get his way.

In his speech—and in the 1960 budget to be announced next Monday—the President said that the major issues this year are economy and price stability. The President is taking up the fight with the overwhelming Democratic majority in Congress.

The issue:

• Mr. Eisenhower believes the nation is growing healthily now; that public projects and programs are adequate for the times, and certainly the nation must pay its going costs in good times.

• Democrats, led by Senate Majority Leader Lyndon B. Johnson, say the Administration is complacent about the needs of the people; that the economy must be more dynamic, must grow at a faster rate. If the consequence is some deficit, then the price of red ink is not too high.

That is the basic conflict in Washington. The consequences of the controversy hit directly at construction of highways, schools, airports, multi-purpose dams and houses.

Conflict will develop over how much money to spend on federal programs, not over whether to spend any money at all.

The President's address acknowledges that more money will be earmarked this year than before for urban renewal, water resources, highways, and science and education. "Federal grants and long-term loans to assist capital improvements in our cities will total over $2 billion in 1960," the President said, "double the expenditure of two years ago." Yet the President warns that local governments should take on a greater share of the costs.

Here's how the specific programs of significance to construction business stack up:

• **Housing**—The Democratic majority in Congress, led on this issue by Sen. John Sparkman and Rep. Albert Rains, both Alabamans, will push for an early omnibus housing program. It will be the same type that the Administration succeeded in stymying in the House last summer.

The program calls for increased aid in all areas: college housing, urban renewal, and public housing.

Senator Sparkman's bill provides for $2.1 billion for urban renewal over a six-year period; $400 million for college housing, an underwriting of $125 million for college classroom construction and about $4 billion a year for two years for Federal Housing Authority mortgage insurance programs.

• **Highways**—The Administration will ask for an increase in the gasoline tax, with revenue earmarked for the highway trust fund. The President is committed to a one-cent to a cent-and-a-half rise. Democratic tax writers are inclined to accommodate the Administration, but there may still be a controversy before the issue is settled.

The conflict: Many Democrats want the interstate system built regardless of whether there is enough user revenue to pay the bills; the Administration is insisting the program will have to be geared to income.

• **Schools**—The President promised he would establish a commission soon to investigate the need for more schoolrooms and more pay for teachers.

Democratic senators, led by Sen. James E. Murray (D., Mont.), are sponsoring legislation authorizing federal grants to states for school construction and teacher salaries. The measure, S. 2, will be taken up in the Senate Education and Labor Committee soon after the committee is organized.

• **Airports**—By design, the first bill introduced in the Senate proposed an increase in federal aid to airports. It is the "Monroney Bill" calling for an increase from the present $65 million a year in federal money to $100 million for jet-age airport building.

The President vetoed such a measure last summer.

• **Public works**—The federal budget, and the appropriations bills that will be introduced following it, will be the public works battleground. The President is expected to recommend no new projects in the budget; but he will continue building now under way. In contrast, the Democrats will push a variety of federal dam projects.

Sen. Richard L. Neuberger (D., Ore.) says he hopes to have Senate approval by early spring of his ambitious Columbia River Development Corp. program. Sen. Clair Engle (D., Calif.), newly elected, expects to get an okay, over Administration objections, to federal development of the falling water at Trinity River Dam, which is now well under way.

Congressmen from the Tennessee Valley Authority area will try again to give the TVA the right to issue its own bonds for financing development, though the Administration is still demanding that rigid restrictions be put in such legislation. A pro-TVA bill passed the Senate last year, but was blocked in the House.

The National Rivers and Harbors Congress, in a program sent to Congress last Thursday, recommends that federal spending be maintained at not less than $1 billion. Rep. Overton Brooks (D., La.), president of the organization, asked for some new starts.

• **Labor**—President Eisenhower's labor reform proposals would be stricter than the ill-fated Kennedy-Ives bill on two specific points—blackmail picketing and secondary boycotts. Otherwise, he favors the same principles of insuring legal elections of labor officials and safeguarding union funds.

But it is the first two points that divide the Eisenhower Administration and the Congressional liberals, backed by organized labor. The AFL-CIO is opposed to curbs on boycotts and "blackmail picketing" (union picketing of an employer whose workers have already rejected the union's organizing overtures). The federation, and its supporters in Congress argue that this is outside the corruption issue.

Labor Secretary James Mitchell will make a fight over this, arguing that these practices are part and parcel of the corruption matter.

Broader Outlook Urged for Road Men

Greater interest and voice in all phases of the transportation problem—and in all facets of the urban problem—were urged for the Highway Research Board last week.

Speakers at the board's 38th annual meeting in Washington, D. C., expounded the inter-relationship of highway transportation and urban problems and came up with a few suggestions for their solution.

The Highway Research Board is a cooperative organization of highway engineers that operates under the auspices of the National Academy of Sciences-National Research Council. Some 2,200 persons attended its sessions.

They were greeted by Detlev W. Bronk, president of NAS-NRC, who pictured for them some of the problems now facing transportation.

Railroads, he noted, are in grave danger; some threats have been made to eliminate all passenger transportation in 10 years. Roads just about hold their own in the face of population growth. And air facilities are limited.

As one start towards a solution, Mr. Bronk said, NAS-NRC is planning a broad study covering the whole complex of transportation.

The next speaker, Wilfred Owen, of The Brookings Institute, called for the establishment of two new research boards: a transportation research board akin to HRB and an urban research board for all urban renewal problems.

The potentialities of such a body were shown several months ago at the Sagamore Conference on Highways and Urban Design at Sagamore, N. Y., co-sponsored by HRB.

Burton W. Marsh, of the American Automobile Association, described the Sagamore meeting, at which interested officials worked on the problems of highways, slums, hospitals, schools.

• **The metropolitan problem**—E. Wilson Campbell, assistant director, Chicago Area Transportation Study, discussed a plan for organizing a continuing agency for a metropolitan area transportation study. He noted that an urban research section set up for Chicago has become a major part of the Bureau of Research and Planning of the Illinois Division of Highways.

Mr. Campbell said such an organization could be made up of three main parts: inventory and data maintenance; staff work; and research.

Records would be kept and updated under the first part.

Staff work would help decision-making agencies by:

• Revising and testing transportation plans.

• Determining priorities in transportation construction.

• Advising on arterial street plans.

• Studying feasibility of mass transit proposals.

• Studying benefits and losses resulting from construction of transportation facilities.

• Studying traffic consequences of new suburban developments.

• Developing special reports for sponsoring agencies.

Additional work would include traffic and planning research, general studies of economics and finance and other research projects.

Discussions at the special sessions indicate many theories, methods, processes and designs developed in past years are now being widely applied.

Subjects fell under the following groupings: economics, finance and administration; design, materials and construction; maintenance; traffic and operations; soils, geology and foundations; night visibility; urban research.

Here are highlights of a few of more than 170 papers presented and discussed at 41 sessions:

• **Widening, resurfacing**—John E. Boring and Bert Myers, of the Iowa State Highway Commission, reported on widening portland cement concrete roads.

One method to bring these old roads up to modern widths is to add strips along the edges and resurface both old and new with asphaltic concrete. A problem in this is that longitudinal cracking occurs along the joint and is reflected through the resurfacing.

Mr. Boring and Mr. Myers examined roads where the widening strips were either of all portland cement concrete, rolled stone and asphaltic concrete, or all asphaltic concrete. No dowels into the main slab were used.

They observed 1,310 miles of joints. And although comparative data are limited, they came up with the following tentative indications:

• Welded wire fabric reinforcement in the asphaltic concrete resurfacing will reduce or delay development of longitudinal crack reflection.

• There is no clear indication that one type of widening is superior to the other.

• A year's delay between widening and resurfacing gives benefits equal to or greater than wire reinforcement.

• **Continuous pavement**—A second-year report on two miles of four-lane continuous, reinforced-concrete pavement near York, Pa., held some good conclusions. I. J. Taylor and W. J. Piney, Lehigh University, had this to say about the heavily traveled road:

• Pavement is in as good condition as conventional jointed roads in the same area. Moreover, the continuous pavement is smoother riding.

• There is no evidence of distress; and no maintenance has been required.

• No new cracks have developed in the last year. Existing cracks, which don't affect riding quality of road, are gradually stabilizing.

• Continuous, reinforced-concrete pavement, even in its present state of development, meets requirements for future highways. And it is definitely superior to conventional pavement.

• **Speed limits**—When speed limits were raised from 30 mph to 35 and 40 mph on 21 miles of major streets in St. Paul, Minn., this is what happened, according to Eugene V. Avery, city traffic engineer:

• Median driving speeds tended to be the same for before and after; the 85-percentile speeds also were about the same.

• This meant that raising the speed limit to conform to the "before" 85-percentile speed did not speed up slow drivers nor slow the faster drivers.

• What it does do, then, is create a reasonable and enforceable traffic law.

• **Highest award**—The Roy W. Crum Distinguished Service Award—highest honor the HRB bestows—went to Harmer E. Davis for 1959. He was cited for "his outstanding record of leadership and achievement in highway engineering, in highway engineering research, and as an educator."

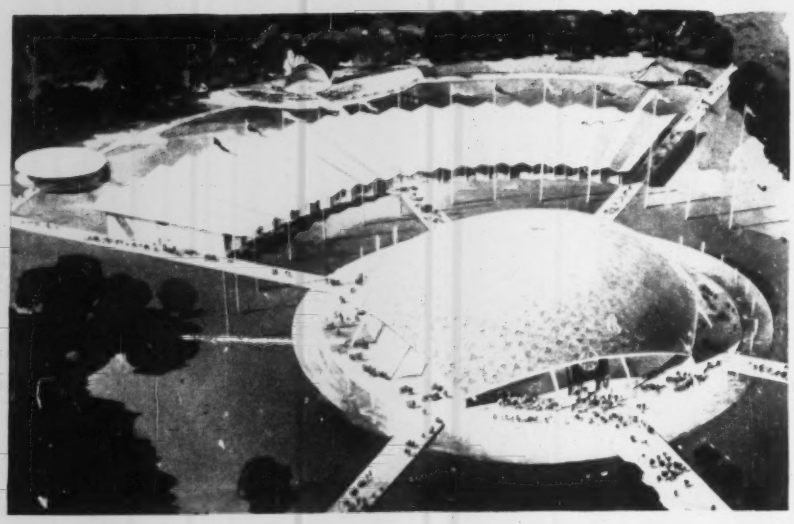
Professor Davis has been director of the Institute of Transportation and Traffic Engineering at the University of California since its establishment in 1948 (ENR June 12, 1958, p. 97).

The 1958 Highway Research Board Award went to Alan M. Voorhees, traffic planning engineer for the Automotive Safety Foundation, Washington, D. C.

His award winning paper, presented at last year's meeting, was entitled, "Forecasting Peak Hours of Travel." It suggested mathematical techniques for predicting future traffic volumes and characteristics, instead of time-consuming and costly questionnaire methods.

• **New officers**—Harmer E. Davis moved up to chairman of the HRB, succeeding C. H. Scholer.

Pyke Johnson, consultant, Automotive Safety Foundation, was elected to the post of first vice-chairman, which Mr. Davis vacated.



What U.S. Will Build in Russia

The buildings the U. S. will construct in Moscow for a cultural and industrial exhibition next summer will undoubtedly interest the Russians as much as the exhibits that will be displayed inside them.

The structures include a 200-ft-dia, gold-anodized aluminum dome, a long, curved exhibit hall with a serrated, metal deck, steel-truss roof and a circular amphitheater.

The dome will be used for science exhibits. It will be prefabricated in the U. S. by Kaiser Aluminum & Chemical Corp. The 65-ft-high, 52-ton enclosure will be shipped flat to Moscow in the form of 1,100 diamond-shaped panels and 1,110 tubular struts. Erection has been contracted to Lydick Roofing Co., Ft. Worth, Tex.

Directly behind the dome will be a products exhibit building, 120 x 500 ft long and containing 50,000 sq ft of exhibition space. End walls will be masonry; the front and rear, glass in steel frames.

At the left rear will be a 55-ft-dia "Cinerama" building, identical to the theater that made such a hit at the Brussels Fair last year.

Welton Becket & Associates of Los Angeles are architect-engineers for the project. Richard R. Bradshaw is the consulting structural engineer.

Except for the dome, all material will be purchased and prefabricated in Milan, Italy, by Reynolds-Eral of New York and Milan.

After the exhibition, all buildings will be purchased by the Soviet Union.

Masonry Dam Crumbles in Spain

A 112-ft-high masonry and concrete dam gave way in northwest Spain last week and released its rain-filled reservoir on a mountain village three miles down the Tera River. The village was destroyed and 150 persons drowned.

Vega de Tera Dam was a straight structure with masonry buttresses and a concrete deck. Seventeen of the 28 buttresses collapsed. A 330-ft-long section of the dam, including a ski-jump spillway at the center, was swept away. The dam's powerhouse also was destroyed.

Heavy rains had filled the reservoir for the first time since the dam was completed two years ago. The failure evidently occurred just as the dam's crest was topped.

An estimated 230 million cu ft of water from the reservoir roared down on the village of Rivadelago in the province of Zamora. The village's elevation is 1,700 ft lower than the dam's.

The force of the water moving down this slope destroyed 125 of the community's 150 buildings. Loss of life in the village of 500 people was high since the break came in the early morning when most of them were asleep. Few had a chance to reach the safety of high ground.

The dam was built at a cost of $4.6 million by the Moncabril Hydro Electric Co., which operates several other dams in the area. The powerhouse, also located below the dam, had an installed capacity of 43,000 kw.

The dam is located in one of the most inaccessible parts of Spain. Continuing rains and poor visibility have impeded rescue operations.

Highway Man Quits

'Non-political' road boss forced out by politics

Arkansas' first "non-political" highway director has resigned—under political pressure.

Herbert Eldridge, who moved from Texas to take over the Arkansas top job in 1953, will leave March 1. His resignation was announced last week.

He will leave as something of a martyr, apparently to help clear the way for legislative passage of the Highway Department's $170-million biennial budget, a $7.7-million increase in highway user taxes and to save the commission the embarrassment of a long squabble.

The budget failed in two attempts in November to get past the state's Legislative Council, whose members mostly took pot-shots at the highway director—even hinting that they might "legislate" him out of a job. Finally the budget was passed to a joint committee of the General Assembly, which convenes this month.

There had been little or no criticism of Mr. Eldridge's work. Most of his critics just resent him.

Basically, Mr. Eldridge is a victim of a shattered tradition—a tradition that said no Arkansas governor could be elected to a third term.

In 1952, Arkansas voters adopted the Mack-Blackwell Amendment, which was supposed to take the Highway Department out of politics. It was designed to remove political control of the governor by staggering the terms of commission members so one governor could not appoint a majority.

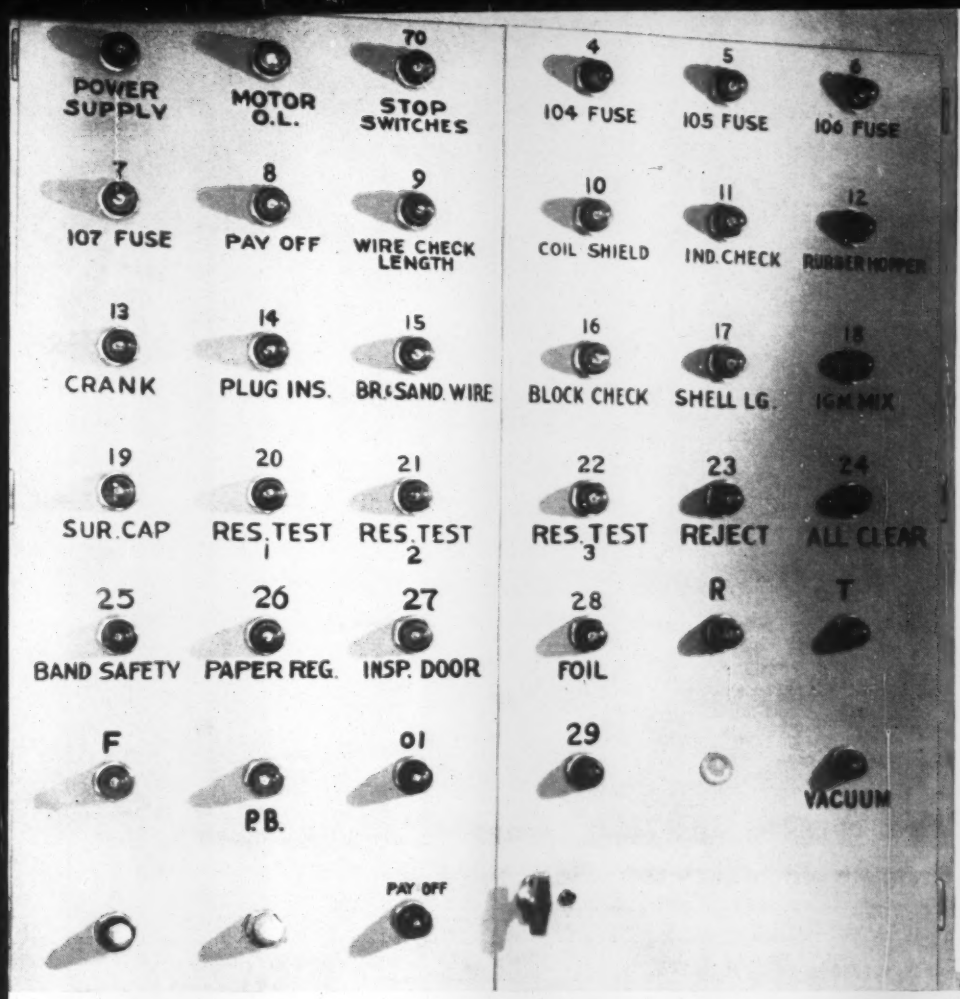
But Gov. Orval E. Faubus, a former director, who was an applicant for the job Mr. Eldridge got in 1953, upset tradition by winning a third term last November. Since 1955 he has appointed three of the five commissioners and has announced his choice for a fourth.

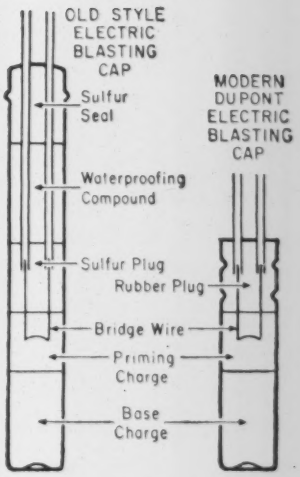
Nashville Will Get First Subdivision Sewage Plant

A subdivision near Nashville, Tenn., is being planned with its own sewer and sewage plant. At least two other developments might follow suit.

Builders and county officials are turning to this method of waste disposal because there is little chance that a metropolitan government will be formed to take in the City of Nashville and surrounding counties. It was hoped that such a government would provide an area-wide sewer system.

The County Health Department has given the subdivision-treatment-plant idea strong backing.





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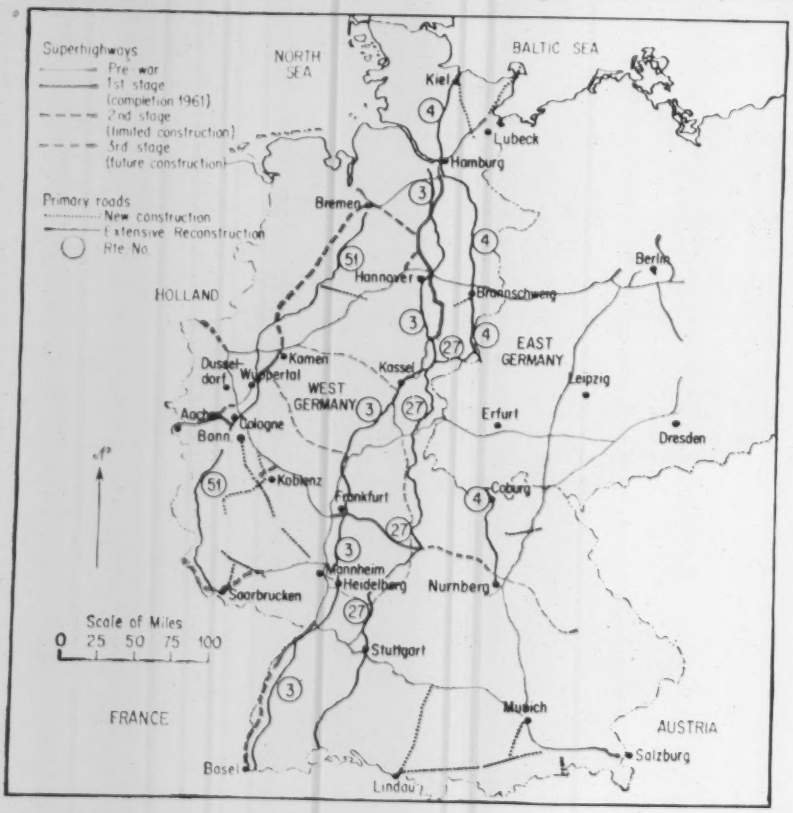
Highways like these at Hamburg are costing $300,000 to $8 million a mile.



West Germany is getting network of new and rebuilt roads.

Germans

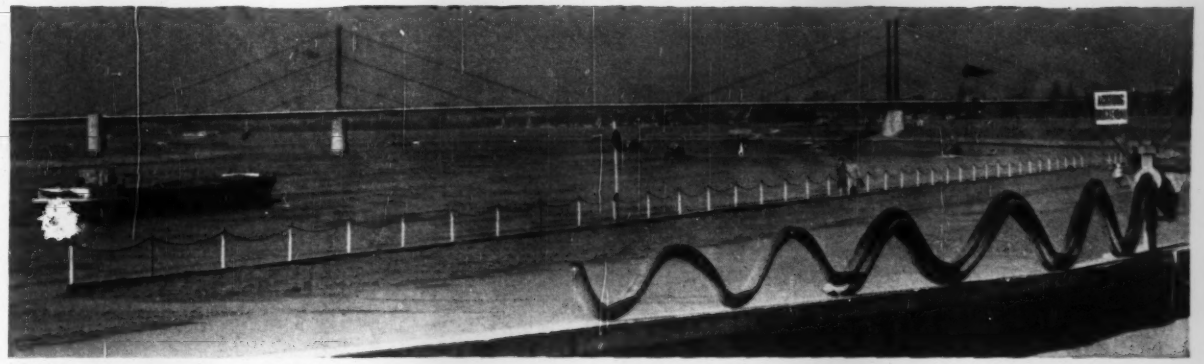
West Germany is making good progress on its 12-year, $15.5-billion highway program—the largest and most costly outside the U.S.

And if present schedules are not seriously delayed, Germany may also move into second place for annual highway expenditures. In 1957 it spent $883 million—only $2 million less than second-place Canada. (The U.S., with 30 times the area, spent only six times as much that year.)

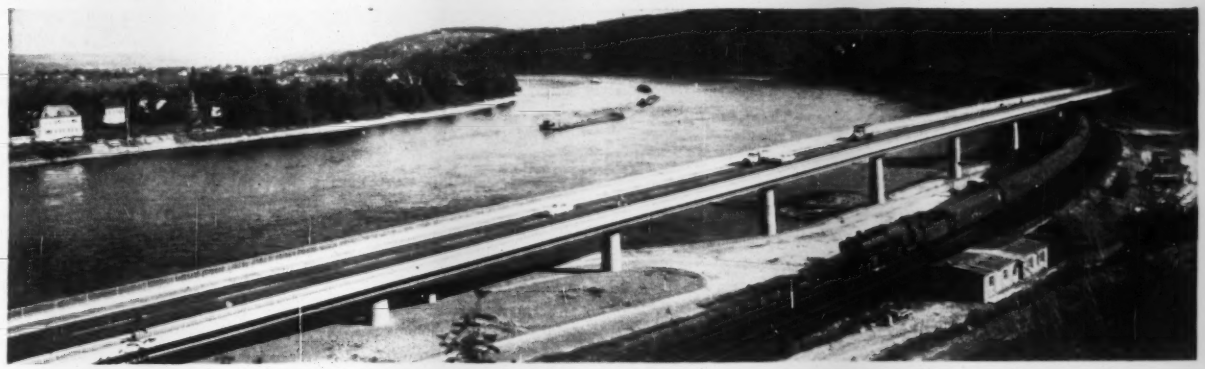
In part, the big German plan calls for building about 1,000 miles of new limited-access superhighways, rehabilitating and resurfacing 800 miles of pre-war superhighways or "autobahns," constructing several major new primary roads and completely revamping 7,000 miles of existing primary roads.

By 1963 it will be possible to travel non-stop from Lubeck on the Baltic Sea to Basel on the Swiss frontier and from the Low Countries in the northwest to Berlin and beyond (see map).

Some $13 billion will be spent on superhighways and $2.5 billion will go into the primary roads. The size of the expenditures related to the mileage of



Nord Bridge at Dusseldorf has rigid continuous girders supported by 12 cables.



Unkelstein Viaduct, clean-lined and graceful, parallels the Rhine near Bonn.

Push $15.5-Billion Road Program

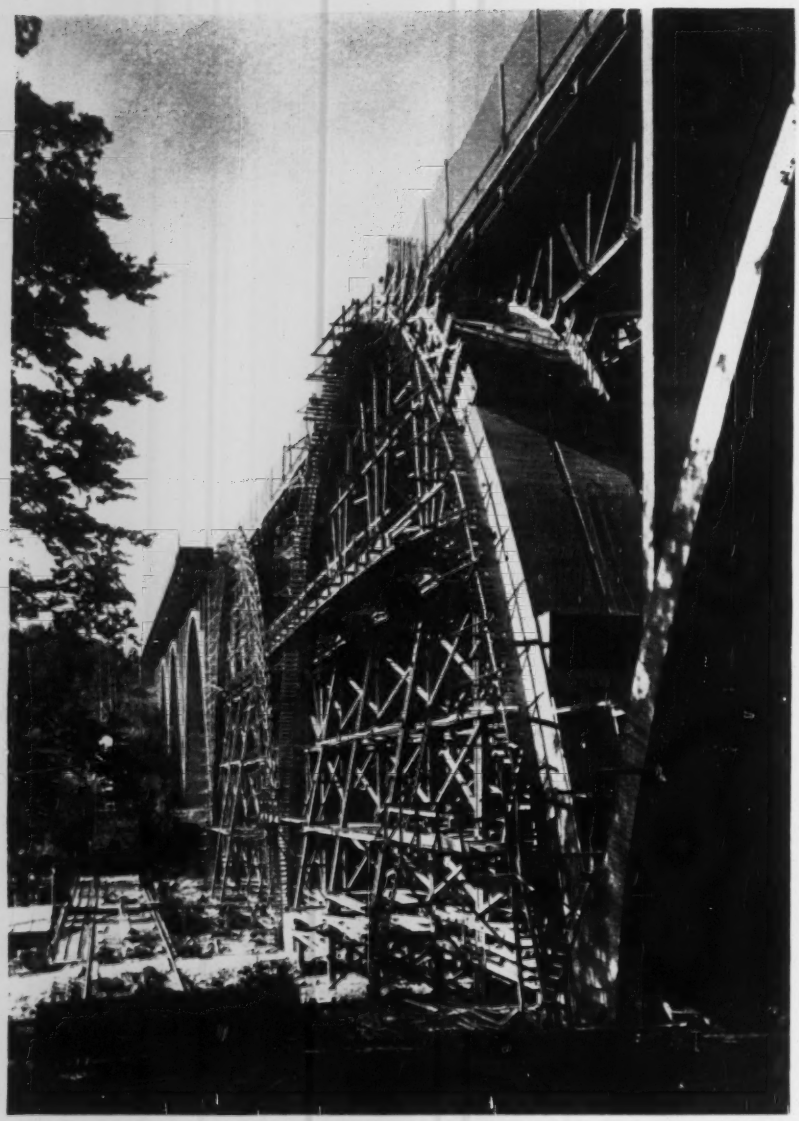
highways being built and rebuilt indicates the high cost of the work.

Much of the primary road rehabilitation is costing close to $400,000 per mile. Expressway work in Berlin is exceeding $8 million a mile, exclusive of right of-way costs. Some simple and straightforward autobahn construction is as low as $312,000 per mile, but other sections will cost over $3 million per mile. This is particularly true in the Ruhr and Saar areas where limited-access highways will require as many as six bridges per mile. These costs are comparable to those for similar construction in the U.S.

1. Autobahns

Rehabilitating pre-war autobahns is the biggest problem facing German roadbuilders. About 40% of the 1,900-mile system needs work. These superhighways were well located, carefully designed, and beautifully built, even by today's standards. However, the pounding handed them for more than 20 years by military and commercial vehicles has taken its toll. Despite excellent mainte-

Bridge on Munich-Stuttgart road is a multiple arch structure.



RECONSTRUCTION of war-damaged bridge on Munich-Karlsruhe road was completed last October. Temporary deck, placed in 1947, kept bridge in use during work.

nance, many miles of the autobahns now need resurfacing.

And one original design feature must be changed. The heavy outside curbs, installed during construction, must be removed and replaced with a wide, paved shoulder. This work is being done as rapidly as traffic conditions, money and equipment allow.

New autobahn work is also progressing rapidly. It is being done in three stages.

First stage construction started in 1955. It's well under way and should be completed before the 1960 deadline. Already 250 miles of freeways have been opened and another 400 miles will be in use by 1961.

Limited work is in process on the second stage construction but several difficulties (shortage of money, for one) may put it behind the scheduled 1963 completion. Among the projects affected are the southern section of the Karlsruhe-Basel highway and the southeastern end of the Frankfort-Nurnberg road.

Third stage construction has not yet started but route location and design work is well under way. Included: a connection between Saarbrucken and the French border, a highway running southwest from Nurnberg toward the Austrian boundary, and a roughly semicircular connector between Heidelberg and Kamen.

The most impressive phase of the plan is the north-south link coupling Hamburg and Hanover in the north with Munich and Austria in the south.

The first 100-mile stretch between Hanover and Hamburg was opened last September. It is now possible to travel by car between these cities in under two hours. That's less than half the time required by cars using the old road. It takes three hours by train.

On the southwestern leg of the north-south highway system, progress is being made on the 125-mile road between Karlsruhe and Basel. The last 60-mile stretch should be ready by 1961.

Also to be finished that year is the last 25 miles of the 76-mile run through the highly industrialized Saar between Mannheim and Saarbrucken. This road will ultimately be extended to the French border near the Luxemburg line.

Another superhighway scheduled for a 1961 opening is a 134-mile run between Frankfurt and Nurnburg. This road, on the east-west system, will greatly speed traffic between the English Channel countries and the Bavarian Alps and Austria; it will relieve traffic on a dangerous stretch of autobahn between Frankfurt and Mannheim; and it will open to tourists Bavaria, one of Germany's most beautiful sections.

2. Primary Roads

Planning and new construction of primary roads is not being held up because of the emphasis on autobahns.

The West German Federal Republic last June signed an agreement with Denmark for construction of a straight-line route that will link the Scandinavian countries with the Mediterranean coast. The proposed land and sea route will extend northward from the autobahn terminus at Lubeck to Grossenbrode, across Fehmarn Island and Fehmarn Strait to Rodbyhaven, then on to Copenhagen. This route should be open for traffic by 1963.

Several other short, but important, sections of new primary roads are either planned or under construction.

Rehabilitation of primary roads is taking a big chunk of the highway budget. Four major projects are under way at a cost of $363 million.

The 500-mile-long, north-south B 3 highway, which runs from Hamburg to Basel, is being extended and widened from its northern terminus southward to Karlsruhe. Estimated cost of the work on this 300-mile stretch is $107 million.

Also undergoing major rehabilitation are two other major highways running parallel in a northeast-southwest direction across the industrial center of Germany. When complete they will appreciably speed traffic crossing Germany from the eastern, western and northern borders and they will greatly improve connections between the North Sea ports and the Ruhr.

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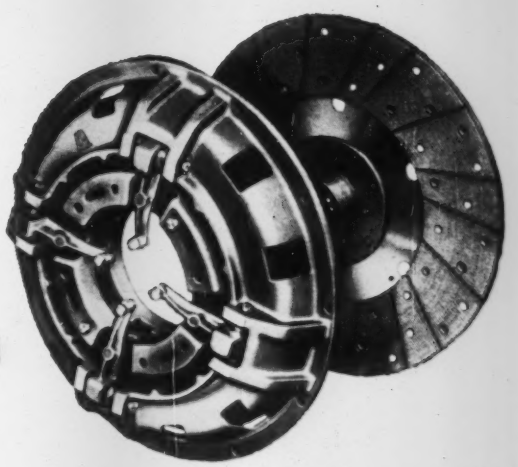

Lipe TC Constant Capacity Clutches available in 15½" and 17" Single and Double Plate Sizes—torque capacity range of 715 to 3700 ft. lbs.

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JOHN M. PAGE (left), of the U. S. Bureau of Public Roads, and George Sharp, of England, watch base compaction on Remscheid-Kamen Expressway.

projects is the $110 million reconstruction of the 350-mile-long Route B 27. This road connects with Route B 4 just north of the East German border and runs southward to the Swiss border just east of Basel.

To the north and east is parallel Route B 51, running from Bremen to Saarbruken. It is being widened and partially resurfaced at a cost of approximately $106 million.

The fourth major project is a $40-million rehabilitation of some 250 miles of Route B 4, which connects Kiel on the Danish frontier with Nurnburg in the Bavarian foothills. The central 95 miles of this road are in communist East Germany. However, connecting routes (chiefly B 27) make it possible to use both ends of B 4 without entering East Germany and without making any major detours.

Communist control of East Germany has not kept West German engineers from roadbuilding within the free sections of Berlin. Extension work is going ahead on a 60-mile-long system of circumferential and cross-city expressways and connectors to major autobahns.

The first section of this expressway is scheduled to open this month. It is 1¼ miles long and will cost more than $7 million, exclusive of right-of-way. In it is Germany's widest highway tunnel—a 700-ft-long structure carrying two separated roadways, each with three 11.5-ft traffic lanes.

A second section is also under construction. It is 2¼ miles long and when completed in 1962 it will have cost just under $20 million.

Recent roadbuilding in Germany has involved the construction of several impressive structures. The most interesting of these is the 4,170-ft-long Nord Bridge over the Rhine at Dusseldorf.

The structure has three major components: a 12-span right bank elevated roadway; a six-span left bank flood bridge and a three-span bridge over the river.

The river structure is a form of bridle-chord suspension bridge. Its structural system is a rigid continuous girder supported at four points and strengthened by four sets of triple suspension cables. The cables are supported by 131-ft towers.

3. The Methods

The design and construction of German roads and superhighways is generally regarded as excellent.

John M. Page, Texas division engineer of the U. S. Bureau of Public Roads, who recently visited Germany, says they compare favorably with those in the U. S.

In design of autobahns, special consideration is being given to the topographical features that will permit varying width medians, opposing roadways at different elevations, low gradients, wide sweeping turns and adequate shoulders.

For autobahn and primary roads, the Germans pay great attention to the over-all build-up of the roads. They particularly emphasize subgrade and base course work.

Subgrades are heavily compacted, and the base courses are carefully watched from the standpoint of type, size and quality of material used, as well as its placement and compaction. Use of asphaltic concrete surfaces is general.

Most of the new highways are four lanes wide to provide two lanes of traffic in each direction. Some highway designers would like to use six or even eight traffic lanes, but the objection of German drivers to passing on both sides has made this impractical.

B.F.Goodrich

These B.F.Goodrich tires still going strong after 51,456 miles of rugged construction work

WALLACE, KINNEY AND LOCHRIDGE TRUCKING CO. of San Mateo does construction work all over California. Here the job is hauling fill dirt for runway expansion at San Francisco International Airport. Trucks travel both on and off the road carrying loads as heavy as 27 tons.

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B.F.Goodrich *truck tires*

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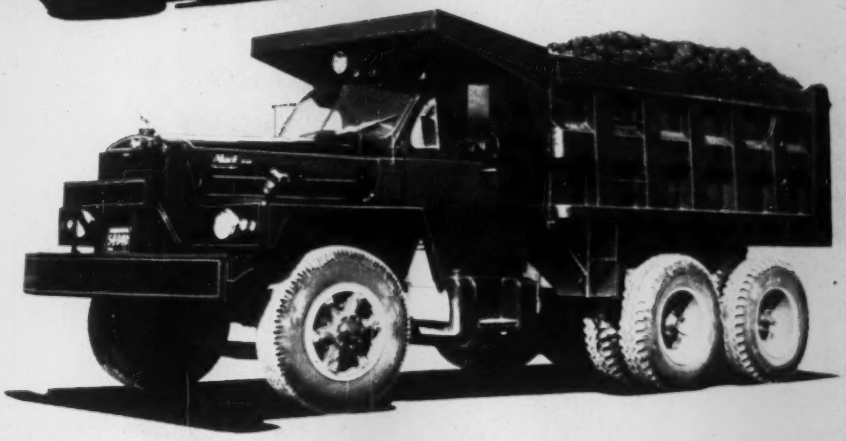

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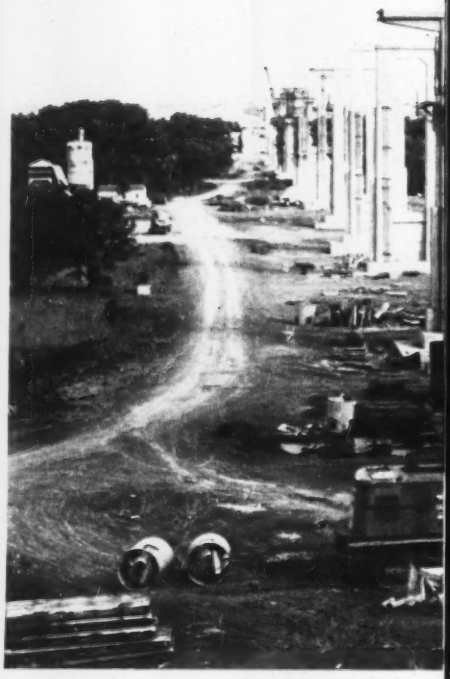
Big crane reduced falsework, trimmed costs on both spans.



South Dakota saved money by

Big Bridges

A team of bridge designers and builders, determined to get the most for their bridge building dollar, saved an estimated $1 million each on two high-level bridges over the Missouri River in South Dakota. The spans cost about $4.5 million each.

Both bridges will cross the reservoir created by the Corps of Engineers' $390-million, multipurpose Oahe Dam. One bridge, near Forest City, about 50 miles due north of Pierre, S. D., was completed last fall. It is 4,585 ft long. The other, at Mobridge, 40 miles upstream, is still under construction. It is 5,060 ft long.

Each structure far exceeds in engineering complexity and money value any other current project in the Dakotas constructed by state or private organizations. And each exceeds in magnitude any other bridge between the Missis-

using same substructure forms on two look-alike bridges as . . .

Prove Big Bargain

sippi River and the West Coast. The structures were designed by the bridge division of the South Dakota Department of Highways (see Vital Statistics, p. 42).

The key to cost cutting was farsighted planning, repetitive formwork and duplication of steel fabrication. Engineers designed the substructures of each bridge for maximum reuse of forms. And they designed continuous trusses and girders in each superstructure to permit a fabricator to take advantage of maximum repetition of sections.

But the concept of form-reuse and duplicate fabrication went even one step further. The two bridges are so nearly alike that substructure forms for one could be used on the other. Moreover, superstructure fabrication and erection on one site could be repeated at the other.

The estimate of a $1-million saving on each bridge comes from South Dakota's bridge engineer, Kenneth R. Scurr. This includes savings obtained when both bridges were contracted at prices substantially lower than preliminary estimates. The Forest City bridge will cost $4.6 million compared with an estimated cost of $5.3 million; the Mobridge bridge will cost $4.4 million compared with an estimated cost of $5.1 million.

The unit prices bid were lower than usual on work of similar magnitude and complexity. Chief factors in this favorable price condition undoubtedly were the maximum reuse of concrete forms and the duplication of steel fabrication.

But there was a third important economy factor: The state already had the foundation piling. This removed all speculation by the contractors on price and availability of about 5,500 tons of steel piling required for both structures.

South Dakota purchased the piling in 1956 when it became evident that steel, especially piling, would be in short supply and subject to long delays in delivery.

Another substantial saving in construction cost resulted from the use of lightweight aggregates in the floors of both bridges. Using the lightweight aggregates, which produced a concrete weighing about 95 lb per cu ft, reduced the total floor dead load of the Forest City bridge by about 3 million lb. For the Mobridge bridge, this reduction was about 3.3 million lb.

These decreased dead loads were translated into a considerable reduction in the weight of structural steel. Result: reduction in the cost of both bridges below what it would have been had regular heavy aggregates been used.

A typical 1-cu-yd mix for the 95-lb concrete in the 5½-in.-thick floor slab included: 635 lb of cement, 35 gal of water, 1,210 lb of fine aggregate passing a ⅜-in. sieve, 405 lb of coarse aggregate passing a ¾-in. sieve, and 1¾ lb of air-entraining additive.

According to cost analyses made by the designers, both bridges reflect substantial economies compared with the structures they replace. The old Forest City bridge cost $450,000—$13.20 per sq ft of deck—in 1925 when the ENR Construction Cost Index averaged 206. In 1957 the Construction Cost Index averaged 723, indicating that this same structure would have cost about 3½ times as much—about $1.6 million or $45.85 per sq ft—if it had been built during 1957.

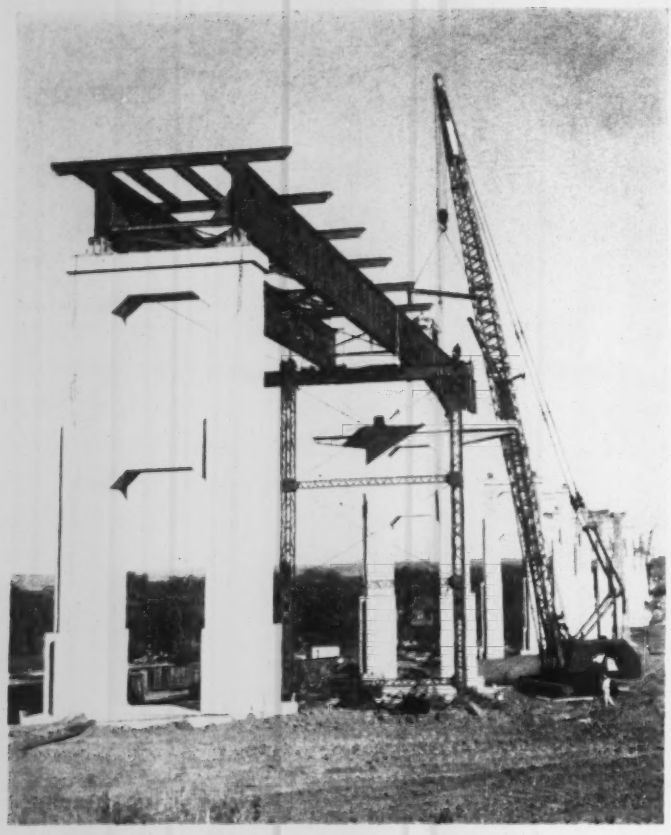
The new Forest City bridge is costing $4.6 million—only $36.33 per sq ft. Included: about $410,000 for steel piling stockpiled by the state, $1.2 million for substructure and $3.0 million for superstructure.

You can get a better picture of the design economy by these facts: The new, 4,585-ft-long bridge is 2.7 times as long, three times as high, 1.5 times as wide and has a live load capacity 1.4 times as great as the original, but it is costing only three times as much as it would to build the original structure at present day prices.

Similar economies are reflected in cost analyses of the old and the new bridges at Mobridge.

Theoretical bridge economy is attained when the cost of the foundation equals the cost of the superstructure minus the cost of the floor system and railings, which are constant values for any combination of spans.

Where minimum navigational clearances are specified by the Corps of Engineers, as in this case, theoretical



Crane places continuous girders at Mobridge site

. . . Stiffleg derrick lifted truss members

Job-made rail car carries men and materials on bridge roads.

economy cannot always be attained. Nevertheless, it was closely approximated in these two bridges.

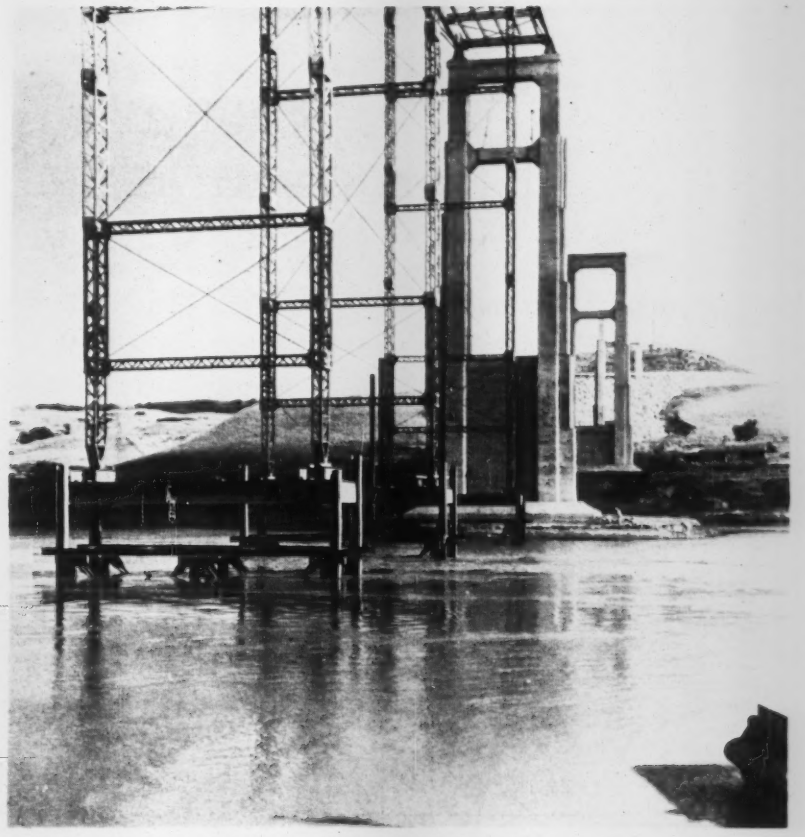
On both jobs the superstructure contractor used a minimum of falsework by employing a crane with a 200-ft boom and a 60-ft jib. The crane operated either on land or on a barge anchored in the river. For some cantilever erection, temporary construction members were inserted in the trusses to take erection stresses. Contractors could then get along with a minimum number of fabricated erection bents.

These erection bents are the contractor's own design. They are adjustable, through a total height of 9 ft and to within 2 in., by matching holes spaced 2 in. c-c vertically. Hydraulic jacking devices in each leg of the bent make the final adjustment within any reasonable tolerance.

Four of these two-legged bents were used at Forest City, and later at Mobridge. They were founded on four-column, framed sub-towers driven into the river bed, or on steel beam grillages on the river banks.

Field connections for the truss members, framing and floor systems were made with high strength bolts, as were field splices for the girder spans. These

for Forest City Bridge.



Telescoping erection bents have built-in jacks.

bolted splices were kept to a minimum, however, by field welding two or three shorter lengths of girder into one long member. Long members were erected into place atop the two-column piers.

The superstructure contractor shipped to the Forest City bridgesite a greater weight of construction items—trackage, cranes, erection bents—than the 4,000 tons of structural steel in the bridge. The same holds true at Mobridge.

Construction methods used by the foundation contractor were virtually the same for both structures. The design permitted the construction of both bridge foundations without the use of cofferdams. Only two piers for each structure are located in the flowing stream and at those sites causeways were built out into the stream. This permitted "in the dry" construction using construction-fill island methods.

At the Forest City site, 14-in., 102-lb, steel-bearing piling was driven to a maximum depth of 140 ft into Pierre Shale by a steam hammer with 30,000 ft-lb of energy. A 30,000 ft-lb-capacity diesel hammer drove the piling at Mobridge to a maximum depth of 115 ft. The traveling, stiffleg derrick lifted the heaviest and highest bridge sections. It operated on a tremendously heavy

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Completed Forest City bridge is 4,595 ft long.

track on land and on its pontoon barge when erecting steel over water. The complete trackage, with crane rails spaced 52 ft c-c, weighs 2,000 lb per lin ft. It was fabricated in 50-ft sections, each weighing about 50 tons. There were eight of these sections totaling 400 ft. Cost was about $500,000.

The big rig, with a 50-ft section of trackage, sets on an eight-pontoon barge when erecting steel over water. It has a 137-ft mast, two stifflegs with an 80 deg spread between them and a 19-part boom line. It is rigged with three load lines capable of making lifts of 250 tons, 50 tons and 25 tons, respectively.

Converting the big derrick from dry-land hoisting operations to a marine rig was a major, but relatively simple, task. Here's how they did it.

Moving parallel to the bridge on its heavy-duty, crane-rail trackage, the derrick worked its way to a point near the river and opposite a sharp bend. It then picked up one of its 50-ft sections, swung it 90 deg and lowered it onto the ground with the crane rails pointing toward a slip that had been cut into the bank by a 12-in. dredge. The derrick was then rotated 90 deg onto the newly positioned trackage and moved out onto similar trackage on the deck of the pontoon barge. Concrete for the tall piers was hoisted into place by tall cranes and the derrick. But the truck-mix concrete, metal decking, reinforcing bars and other materials for the roadway deck, were transported from one end of the bridge. This became quite a long haul as construction progressed.

The problem of long-distance materials-handling was solved by a four-wheel, job-made transporting rig. It ran on two lines of railroad track located above the two outside lines of stringers. It had a top speed of 15 mph.

The rails were extended progressively from one end of the bridge and supported on welded pipe assemblies extending through the concrete slab.

The concrete roadway slab and curbs are supported on galvanized, corrugated steel decking welded to the top flanges of the stringers and floorbeams. This simplified form erection. Moreover, removable forms were virtually out of the question due to the extreme height of roadway above the river and its banks.

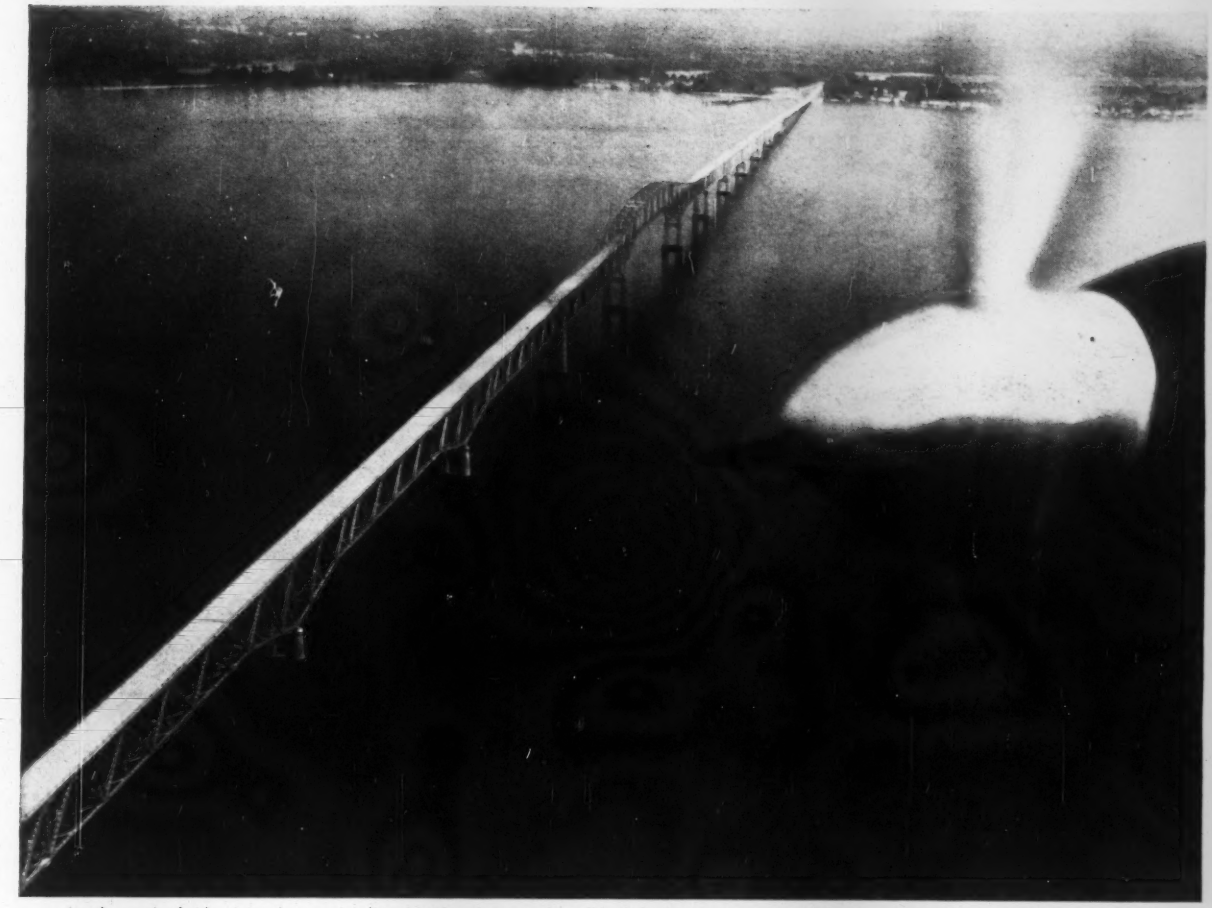
Dakota Bridges: Vital Statistics

• **What**—Two bridges over the Missouri River in South Dakota—one at Mobridge, the other at Forest City—cost only $4.5 million each, carry 16-ft roadways.

The Forest City bridge is 4,585 ft long and rises 165 ft above the river's bed. It replaces a 1,700-ft-long bridge built in 1925.

The superstructure contains 3,025 ft of cantilever and suspended through trusses, flanked on one side by 1,040 ft of continuous deck girders and by 520 ft on the other. The 3,025 ft of truss spans contain four 250-ft suspended spans and three 425-ft anchor spans with six 125-ft cantilevers.

Story continued page 44



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To meet varying design demands, particularly with regard to strength, there are two types of Lukens clad steel bearing plates. The standard type provides a minimum yield strength of 30,000 psi. A higher strength plate—incorporating A-302, Grade B backing steel for use in larger bridges—will meet a 50,000 psi. minimum yield strength requirement. And all bearing plates can be supplied flattened and machined on both sides to within .010 inch of dead flat.

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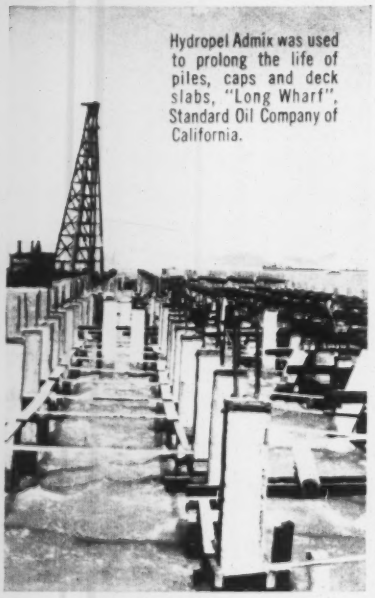

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*The limitations of any product to "waterproof" any type of surface for an indefinite length of time are clearly recognized, as covered by the "Trade Practice Rules for the Masonry Industry," outlined 8-31-46 by the Federal Trade Commission.

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BITUMULS Emulsified Asphalts • CHEVRON Paving Asphalts • LAYKOLD Asphalt Specialties

. . . Vital statistics

Construction of the substructure began in August, 1956, and the last substructure pile was driven in April, 1957. Erection of the steel superstructure was started last April, and the bridge was dedicated on October 21.

The Mobridge bridge will be 5,060 ft long with its roadway about 140 ft above the riverbed. It replaces a 1,630-ft-long through truss bridge built in 1923.

Substructure construction, using insulated forms for the concrete, began in November, 1957, continued through the winter and was completed in September, 1958, about a month ahead of originally scheduled contract completion date.

A typical 1-cu-yd mix for the 95-lb concrete in the 5¼-in.-thick floor slab included: 635 lb of cement, 35 gal of water, 1,210 lb of fine aggregate passing a ⅜-in. sieve, 405 lb of coarse aggregate passing a ¾-in. sieve, and a 1⅓ lb of air-entraining additive.

Steel erection began last August. The bridge will be ready for traffic in July, 1959.

The superstructure contains 2,100 ft of continuous and suspended trusses, flanked by 1,405 ft of continuous deck girder on one side and 1,555 ft on the other.

• **How much**—Together, the two bridges require about 340 carloads (8,400 tons) of structural steel, 125 carloads (3,200 tons) of reinforcing steel, 185 carloads of piling, 660 carloads of fine aggregate, 1,030 carloads of coarse aggregate and 400 carloads of cement. The two bridges contain 37,300 cu yd of concrete.

• **Who**—Personnel of the bridge division of South Dakota's department of highways did the engineering studies and the designs of both bridges. Kenneth R. Scurr, bridge engineer, prepared the basic design and preliminary reports in each case. Roy W. Johnson, chief designer, and structural designers Allen Fladeboe and Elek Kircher, all of the Missouri River bridge section, executed final designs and details.

The projects are under the general supervision of H. C. Rempfer, South Dakota state highway engineer. P. H. Schultz is assistant bridge engineer. Kenneth O. Long is resident engineer in direct charge of both projects.

Kenneth M. Sevey was construction superintendent for the Massman Construction Co. on the substructure contracts. J. W. Fitzgerald is construction superintendent for the John F. Beasley Construction Co. on the superstructure at Forest City. Whitey Lott is construction superintendent for Beasley at Mobridge bridge.

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129

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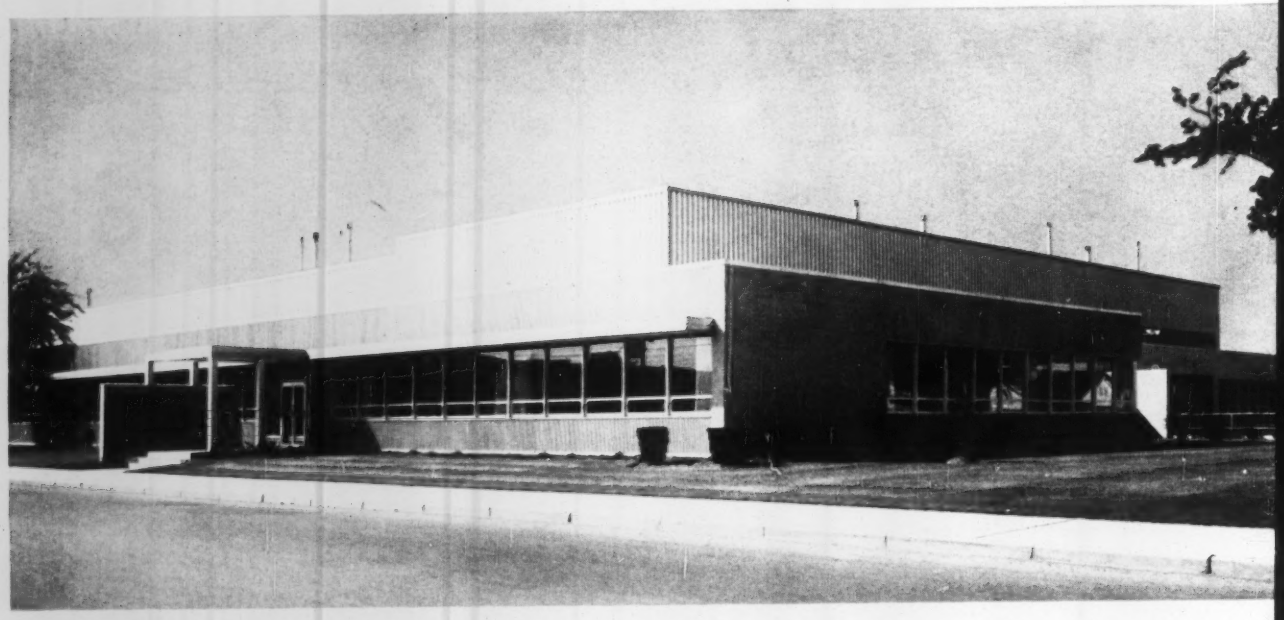

New Metals Service Center for Copper & Brass Sales, Inc., Detroit, Michigan. Mahon Aluminum Curtain Walls were effectively employed in the design of this attractive structure. Giffels and Rossetti, Architects Engineers. Perron Construction Company, General Contractors.

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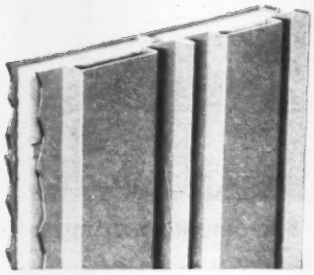

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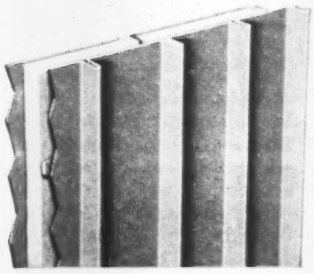
FIELD CONSTRUCTED



MAHON RIBBED WALL
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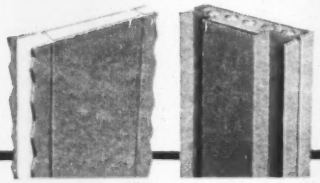

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Assembly line turns out walls, partitions, gables at a fast clip for Sacramento housing project.

Prefab panel, delivered on novel trailer, is placed by crane.

Assembly

An open-air assembly-line construction operation is saving Jacobson Construction Co., Sacramento, Calif., $800 a house and cuts by two weeks the time needed to complete a dwelling.

John A. Jacobson, president, says his company built about 250 houses in 1958 and 190 in 1957 with the factory-in-the-field technique. He expects to build another 250 this year. His houses sell for $13,285 to $17,000.

Production lines are located at one corner of his Rancho Cordova tract. They turn out exterior walls, partitions and gables. Outside panels are completed on the assembly line, except for glazing and placing of metal corners. (Glazing was eliminated when the company discovered that transporting the panels pushed the putty out of place.) Only the framing for partitions is completed on the assembly line.

• **Long-line production**—For the exterior walls, Jacobson uses a production line 250 ft long. For partitions, the line is 100 ft long. Within close reach are lumber and other materials and templets for every wall and partition used in the subdivision.

The assembly lines are set on permanent concrete foundations. The

Site assembly advances in stages: At right, foundations; at left, finishing operations.

Line Cuts Costs for Homebuilders

panels slide on wood rails and are pulled along by drag chains. Panels are held stationary while the carpenters work on them.

The templets allow assembly of wall panels up to 56 ft long.

• **Placed by crane**—The completed panels are hauled to the construction site on trailers pulled by pickup trucks. Jacobson built its own trailers; they cost under $200 each and are more practical for the purpose than any on the market.

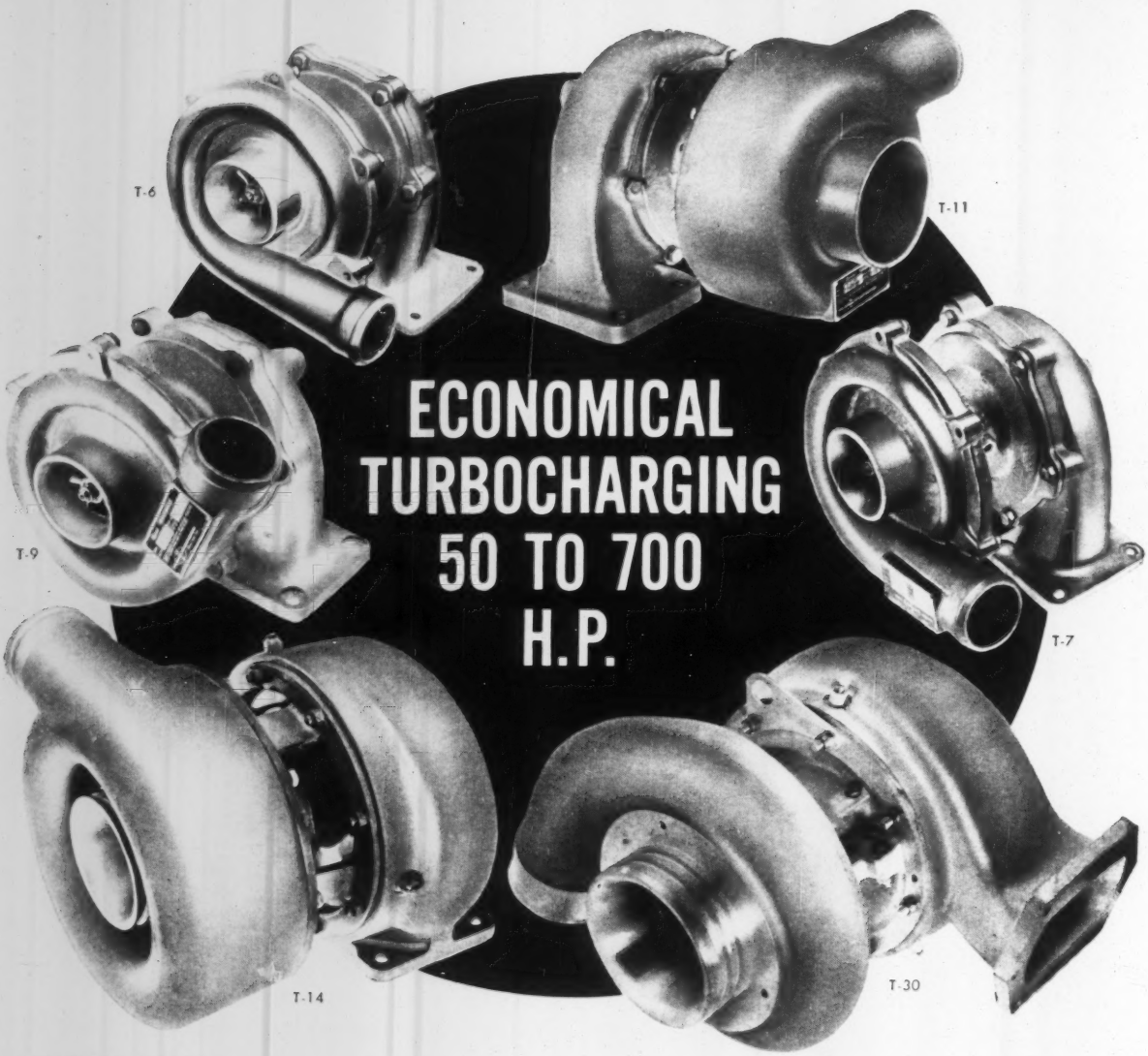
Jacobson erects the panels with a crane. The contractor can place a 56-ft-long panel in 10 to 15 minutes after the panel is at the homesite. He erects a whole house in 2 to 2½ hours.

After the walls and roof are connected to each other and anchored to the foundation, the plumbing, heating, wiring, hardwood floors and tile are installed, plasterboard is attached to the partitions and joints are taped.

With this technique, a house is completed in five to seven weeks. Usually, seven houses are produced in a week.

James McPeak is superintendent of construction on the Rancho Cordova tract. Roy Wickey is assembly-line foreman.

Finished house shows no evidence of prefabrication.



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New Way to Cure Sawed Joints

John R. Richardson
Paving Engineer
Corps of Engineers
Grand Forks Air Force Base, N. D.

Curing sawed joints in rigid concrete pavements has long been a subject of investigation and experimentation—and with good reason. Many pavement failures begin at the joints.

A series of tests in this field have been taking place at Offutt Air Force Base near Omaha, Neb., and at Grand Forks (N. D.) Air Force Base. At Grand Forks the Corps of Engineers has been experimenting for three years with various methods of joint protection during the initial seven-day set period.

Varying degrees of success have been obtained from the different test methods. While no one method tested offers a panacea for paving ills, some results were good enough to warrant analysis.

On present-day paving projects handled by the Corps of Engineers, curing compounds of the liquid-pigmented membrane-type are used. This compound is sprayed on the finished concrete by mechanical sprayers. Some hours after the application of the curing compound, but before the temperature of the concrete slab drops, contraction joints are sawed.

The sawing operation thus breaks the seal provided by the curing compound for holding the water in the concrete long enough to permit adequate curing. The cuts cannot be treated with curing compound because it destroys the bonding properties of the joint-sealing material and the concrete. Thus without some exterior protection the joint concrete is subject to serious deterioration through too-rapid drying.

The initial tests were made at Offutt AFB in 1955. In an attempt to improve curing methods, the Corps, tested the relative effectiveness of three different methods for curing the pavement joints. They had the cooperation of Peter Kiewit Sons and Condon & Cunningham, both of Omaha, and the Hallet Construction Co., of Crosby, Minn.

• **Waterproof paper**—First of these methods was the most commonly used on airport and highway work—waterproof paper was placed across the joints and anchored with sand. Objectionable features were:

• Paper is not always placed smoothly on the concrete and the resulting voids permit air circulation to carry away needed moisture.

• The sand is blown off by the wind and the paper is displaced.

• The paper does not prevent moisture loss at the ends of the saw cuts after form removal.

• Sand falls into the saw cuts often in sufficient quantity as to interfere with satisfactory joint movement.

• The final removal of sand and paper poses a problem in clean up and job appearance.

• **Tight rope**—As a first alternate, ¼ in. rope was packed tightly into the saw cuts. The shortcomings of this method became immediately apparent.

It did not provide a seal for the upper portion of the concrete adjacent to the saw cuts. Furthermore, as the concrete cracked, the rope fell into the widened joint permitting the moisture to escape. It was also found that by absorbing moisture from the concrete the loosened rope acted as a wick.

• **Masking tape**—A third method tried proved equally ineffectual, although a modification of it at a later date achieved good results. The first experiment, which failed, used masking tape to cover and seal the joints. But the tape would not bond with the concrete on which the curing compound had been applied. Even when the tape was sprayed with curing compound it loosened in 24 hours.

A fourth method considered, but not used, involved the use of partially filled sand bags. Preliminary investigation showed, however, that the cost of the bags and the cost of filling them would be prohibitive. Further, the consensus of those concerned was that the bags would not butt closely enough together to form a waterproof seal.

Additional experiments on joint curing were tried during the following season (1956) at the Grand Forks AFB. Here S. J. Groves & Sons, Minneapolis, Minn., prime contractor, and Central States Construction Co., Crosby, Minn., the paving subcontractor, cooperated in a series of tests. Most of them were unsuccessful.

• **Plastic proves best**—Finally it was decided to try a transparent polyethylene plastic strip, held in place by an adhesive. In the initial tests, water droplets forming on the underside of the plastic clearly demonstrated the need for adequate joint sealing. But the available adhesives did not effectively bond the plastic and the concrete for the entire curing period.

This method would be superior to anything previously tried if an effective bond between the plastic and the concrete could be obtained.

The problem was explained to several manufacturers who were asked to submit samples of tape for testing. The tape ultimately used was submitted by Presstite-Keystone Engineering Products of St. Louis, Mo. The material was a consistent 2.5-in.-wide, .0045-in. gage plastic strip with ½-in.-wide pre magum (caulking compound) adhesive beads on each edge.

This was cut into strips of 25½ ft sufficiently long to cover the ends of the saw cuts. These strips were placed over the joints and pressed down with a light roller similar to that used in placing linoleum.

While perhaps not the ultimate in joint sealing, the material provided a satisfactory answer to the problem of curing sawed joints. The bond between the plastic and the moist concrete was effective and formed a watertight seal for the entire seven day curing period. The material was not loosened by high winds; it was easily applied by the sawing crew immediately after the sawing operation; and it posed no clean-up problem when it was removed.

• **It costs no more**—Cost of the polyethylene plastic with adhesive edges has been quoted by the manufacturer at approximately 3½ cents per lin ft. Waterproof paper and sand would cost only one cent per lin ft. However the higher cost of the plastic is offset by lower costs for labor, maintenance, and the virtual elimination of the need for joint cleaning prior to sealing.

It is estimated from the results of the experiments that the total cost of either the paper or the plastic sealer would be the same—approximately 5½ cents per lin ft. By reducing the adhesive bead width from ½ to ¼ in. a further reduction in the cost of the plastic method could be effected.

However, even on an equal cost basis, the increased effectiveness of the cure resulting from the use of the plastic is a significant consideration in its favor. Tests of the adhesive treated plastic, carried on this year, have proved it to be practical, although further investigation into this problem is needed.

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In Canada — Terry Machinery Co., Ltd.

Hydraulic Crane Cuts Maintenance Costs

A newly developed locomotive crane features smooth operation and quieter operating machinery with 90% efficiency, according to the manufacturer. It is diesel-powered and completely hydraulic.

The new crane eliminates all open gearing and eliminates shafts, shaft bearings and clutches. It therefore removes all major sources of maintenance expense, the company claims.

The basic hydraulic principle substitutes relatively simple contrivances for more complicated mechanical or electrical devices. This holds power costs and friction losses to a minimum and eliminates overload damage. The machine is available in nine sizes. ORTON CRANE & SHOVEL CO., 608 S. DEARBORN ST., CHICAGO, ILL.

125-Lb Butterfly Valves Now Come In New Range

BIF Industries, Inc., announces the expansion of its line of butterfly valves to include Builders-Providence 125-lb valves for line sizes ranging from 4 to 48 in.

They are used for replacement, for pressure-reducing and throttling functions, for street shutoff, pump discharge, altitude-storage control and distribution systems.

These compact units can be supported by the line, eliminating special construction. The shaft is one-piece stainless steel and the rugged construction of the valve permits burial without a vault. BIF INDUSTRIES, INC., 345 HARRIS AVE., PROVIDENCE, R. I.

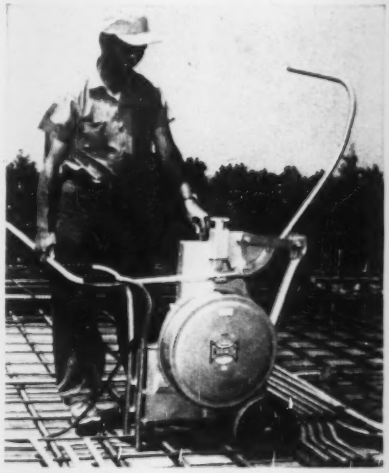
Concrete Curing With a Dry, Fireproof Powder

Reardon's Duscure is a dry curing powder that is sprinkled over fresh concrete immediately after final troweling. No waiting time is necessary after the concrete is finished before the curing process starts.

The powder instantly forms a film that reduces the rate of escape of water needed to hydrate the cement. This film remains on the concrete during the curing period, after which it may be brushed off.

Leaving Duscure on the floor after the curing period protects the slab from plaster droppings, paint spots and other construction stains.

The powder is fireproof, can be spread by hand, and, being white, reflects sunlight, to reduce the internal temperature of an outside slab during the setting period. One pound covers about 20 sq ft. REARDON INDUSTRIES, 2837 STANTON AVE., WALNUT HILLS, CINCINNATI 6, OHIO.



Light Conduit Bender Puts Speed into a Job

A new portable, electric powered conduit bending machine weighs only 150 lb and is capable of making three 90 deg bends per minute. The Condumatic will handle either ½, ¾ or 1-in. conduit or steel tube.

It is made of aluminum castings and powered by a ½ hp electric motor. A reversing switch and thermal overload protector are enclosed in a weathertight housing. The machine has an automatic stop for a 90 deg bend. CHAMBOR MANUFACTURING CO., LONG ISLAND CITY, N. Y.

(*New Products continued page 54*)

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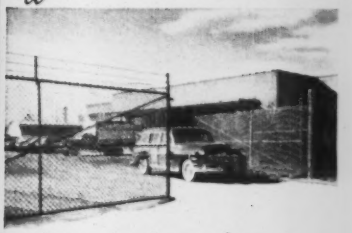

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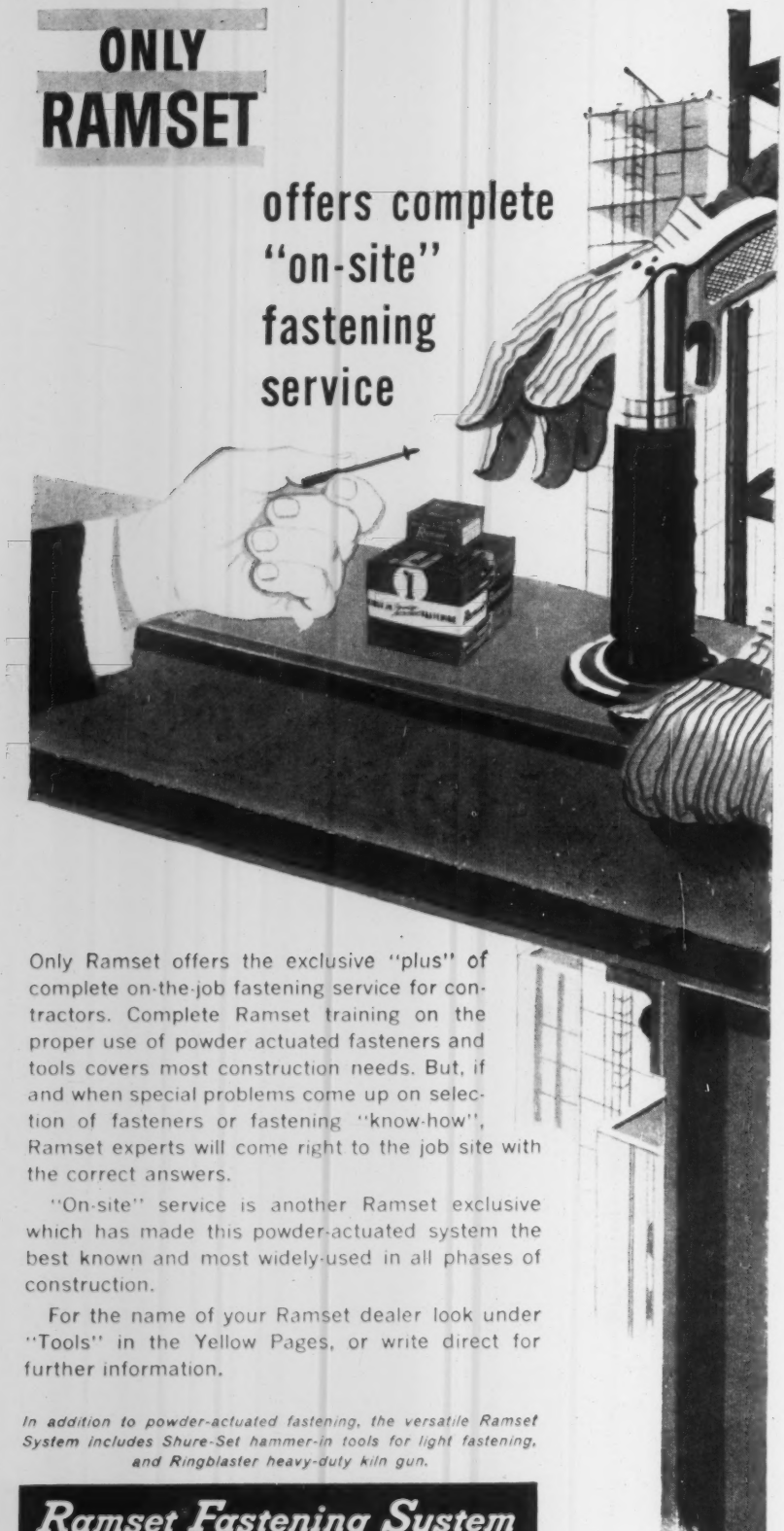

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Glass-Fiber Water Tank Is Centrifugally Molded

A new glass-fiber water-conditioning tank is reportedly the first to be centrifugally molded of reinforced plastics. It is made by impregnating a glass-fiber blanket with a thermo-setting resin.

The process assures uniform wall thickness and finish, and eliminates longitudinal seams that could leak or rupture in service, according to the developer. The material is a nonconductor; thus possible electrolysis between plumbing and the tank is eliminated.

Tank end caps in a variety of shapes are also made of resin-impregnated glass-fiber and are molded to the one-piece tank shell.

The unit is available in a number of permanently molded-in colors. Standard pipe and tube fittings, either plastic or metal, can be supplied with the tank. Fittings may be molded-in. APEX REINFORCED PLASTICS, WASHINGTON AND ELM STREETS, CLEVELAND 15, OHIO.

New Paint Puts Permanent Marks on Steel Sections

"Penapaint," a new marking material can be placed on bare metal to identify iron and steel sections. It will remain visible through subsequent paint coatings or fabricating operations.

When a protective coating is applied to the metal, Penapaint instantly penetrates through the coating, the manufacturer says. Code markings cannot rub or wash off.

When markings are no longer needed, all further penetrating action can be stopped with Penapaint Mask—a compound Penapaint will not penetrate. The mask, when painted over the markings, provides a base for any type of finish-paint coating. PHILLIPS PRODUCTS, INC., 1435 EAST 17TH ST., CLEVELAND 14, OHIO.

Diesel Engines Offered In Improved Tractor Line

John Deere is now putting out diesel-powered industrial tractors.

The new 440 crawler and 440 wheel models are equipped with General Motors two-cycle engines. They are said to deliver 10% more power than previous 440 models.

The tractors also will continue to be offered with gasoline engines of two-cylinder design. The new crawler tractors come with improved transmissions, increased strength and new working speeds, states the manufacturer. JOHN DEERE INDUSTRIAL DIVISION, MOLINE, ILL.

Here's the New Le Roi 125 Rotary

It's the lightest (2,250 lbs.)... the slowest (1600 rpm) portable 125 cfm rotary air compressor on the market!

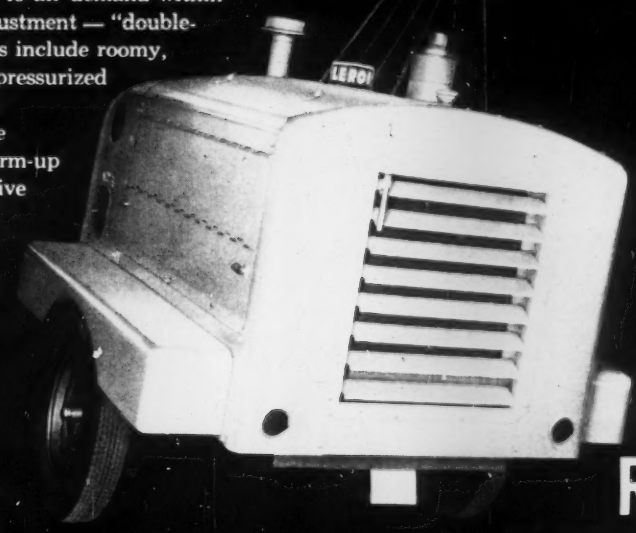
Here's the next best thing to free air power for your construction jobs — the spanking-new, cost-busting Le Roi 125 rotary!

It's the lightest — a mere 2250 lbs. of easy-to-handle air power that you'll hardly notice when shuttling the unit from job to job behind your truck, car, or jeep. But it's rugged enough for your toughest jobs — to take the bumps on any terrain.

It's the slowest — delivers full 125 cfm of free air at 100 psi at only 1600 rpm. Engine and compressor last longer.

It's a gas miser — the proven wet-sleeve overhead-valve Le Roi engine squeezes every ounce of power out of each drop of fuel.

It's loaded — you get 100% capacity modulating control for matching air supply to air demand within 10 psi — one-valve pressure adjustment — "double-life" rotor design. Other features include roomy, full-length tool boxes: oversize, pressurized cooling system. You also get fast 12-volt starting; louver-type adjustable shutters for quick warm-up of engine and compressor; positive lubrication even in cold weather, and caster wheel safety handle. Air-end accessibility eliminates need for removing tanks!



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When completed in 1962, more than 40 million cubic yards of earth and rock will have been moved—over 705 million dollars spent – more than two million kilowatts made available to homes and industry.

Handling a big part of that job is Merritt-Chapman & Scott Corporation, one of the nation's biggest construction firms.

Their contract on the Niagara Generating Plant and the Water Intake Structure, the project's two key sections,

Loaded downgrade, empty up—that's the Niagara Generating Plant hauling story. Grades are steep as 15%.

When completed, the Niagara Power Project will be one of the largest sources of hydroelectric power in the Western Hemisphere.

Some of the equipment M-C&S has working on the Niagara Power Project's main generating plant at Lewiston, New York. TORQMATIC-equipped IHC and Euclid trucks will have moved 10,000,000 cubic yards of rock and earth in about 3 years to build the power plant.

to keep the Niagara power plant job rolling

adds up to over $165,000,000. The power plant alone calls for the excavation of better than 10,000,000 cubic yards and is scheduled to be completed by early 1962.

That gives them about 1100 working days to get the job done—and to help meet this deadline Merritt-Chapman & Scott has picked TORQMATIC DRIVES for its fleet of International Harvester and Euclid trucks on this gigantic project.

You get an idea of how fast the job is going from the simple fact that these trucks are moving 36,000 cubic yards of earth in every 24 hours, despite 15% grades which start after only a 150-foot run.

Availability records are very high, largely because of the heavy emphasis placed on preventive maintenance by M-C&S—but also because of the ability of the TORQMATIC DRIVES to take the rough job conditions. With a lot of downhill hauling involved, the TORQMATIC Brakes are largely responsible for greatly extending regular service brake life, because it saves them for everything but full stops.

If you'd like to meet or beat your contract deadlines at a profit, take a leaf from the books of leading contractors—put TORQMATIC DRIVES to work for you.

ALLISON DIVISION OF GENERAL MOTORS, Indianapolis 6, Indiana

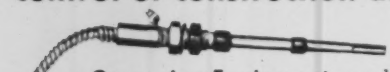
Allison

TORQMATIC

TORQMATIC® DRIVES

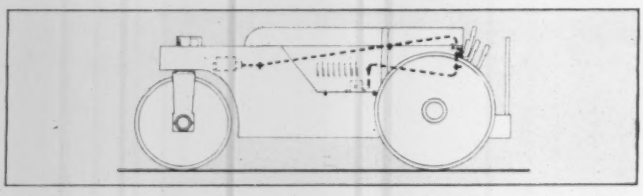
TRU-LAY PUSH-PULLS

give trouble-free, lifetime service for remote control of construction and quarrying equipment

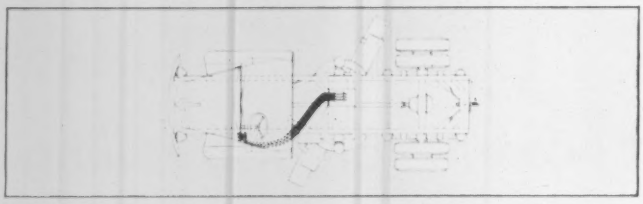


Operators of Construction or Quarrying Equipment can be certain of maintenance-free service from TRU-LAY PUSH-PULL CONTROLS because of their precision manufacture—rugged construction—lubrication for life of the inner, working member at the factory—complete sealing of the entire unit (a vitally important factor in tough, outdoor operations) against dust, dirt or moisture.

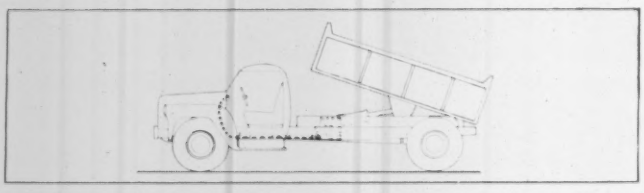
We have never heard of a TRU-LAY FLEXIBLE PUSH-PULL CONTROL *wearing out in normal service.* Examples of heavy-duty applications are shown below. Users of such equipment benefit from simplified equipment design and improved operation.



• Shown here is a tandem roller where two different PUSH-PULL cables are used to facilitate operation. One cable, 156" long, is capable of a 2" stroke to operate the hydraulic steering valve at the front of roller. The second, shorter cable operates tail shaft governor which keeps roller speed constant, upgrade or down.



• More room in the cab of this snow plow was one of the advantages of installing PUSH-PULL cables. This permitted the hydraulic valve to be located at a more convenient point in the chassis. "There are so many things you can do with these flexible cables compared to the old fixed installations," the manufacturer told us.



• Raising and lowering of the dump body on a famous line of hydraulic dump trucks is via TRU-LAY PUSH-PULL cables. With PUSH-PULLS this merely entails the pulling of a button on the dash. The installation did away with cut-up floor boards and levers in the truck cab. TRU-LAY PUSH-PULLS brought easier installation, more convenience and less maintenance.

For complete information
we'll be glad to send you a copy of ***Bulletin DH-461...***

ACCO

Automotive and Aircraft Division
AMERICAN CHAIN & CABLE

TRADE MARK

601-F Stephenson Bldg., Detroit 2
6800 F East Acco Street, Los Angeles 22 • 929 F Connecticut Ave., Bridgeport 2, Conn.

Publications

Tunnel liners—Properties of steel tunnel liner plates. Included are general purpose load tables, how to specify liner plates and tables giving suggested thickness of plates for use in tunnels under railroads and highways. 20 pages. Booklet 300 Cl. COMMERCIAL SHEARING & STAMPING CO., YOUNGSTOWN 1, OHIO.

Power transmission—A line of power transmissions including sheaves, v-belts, pulleys, take-up bearings and couplings. 8-page bulletin 3101. T. B. WOOD'S SONS CO., CHAMBERSBURGH, PA.

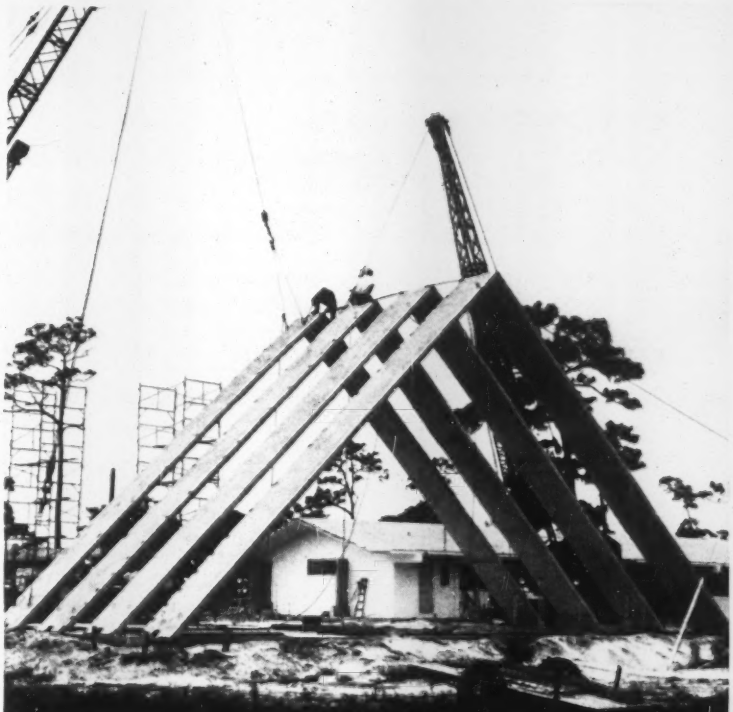
Compressor—The 365 rotary portable air compressor is illustrated and described. General specifications are also included for what is claimed to be the slowest running (1,100 rpm) 365-cfm on the market. LE ROI DIV., WESTINGHOUSE AIR BRAKE CO., MILWAUKEE 1, WIS.

Hazard lights—Uses and maintenance of portable and hazard warning lighting equipment. Product specifications include dimensions, burning time and candlepower. Catalog 58-59. PORTABLE AND HAZARD LIGHTING DIV., R. E. DIETZ CO., 225 WILKINSON ST., SYRACUSE, N. Y.

Drainage structures—A new illustrated bulletin entitled "Brief Factual Data On Corrugated Metal Drainage Structures," contains data on products, sizes, gages, weights and loadings, with useful tables. 6 pages. Ask for CMS-10258. ARMCO DRAINAGE & METAL PRODUCTS, INC., PRODUCT INFORMATION SERVICE, MIDDLETOWN, OHIO.

Tube fittings—A publication on hydraulic tube fittings is divided into three sections covering self-flaring fittings, no-flare fittings and flare-type fittings. Each section contains information on design and installation of the particular type plus detailed dimensional and engineering specifications. Included are all popular shapes and sizes from ¼ to 2 in. Several pages are devoted to specifications on high pressure steel pipe fittings. 28 pages. Catalog No. 556. FLODAR CORP., 16911 ST. CLAIR AVE., CLEVELAND 10, OHIO.

Portable Rotary Compressor—specification sheet describes and illustrates the Le Roi 1200 RD2, a 1,200 cfm rotary unit. Gives specifications and performance data of the compressor, the engine and the mounting. Also lists weights and dimensions. Spec sheet P-114. LE ROI DIVISION, WESTINGHOUSE AIR BRAKE CO., MILWAUKEE 1, WIS.



Working together, two cranes position prestressed slabs. 20 slabs are 5½" thick, 4' wide and 38½' long; 8 slabs are 4" x 4' x 38½'; there are 10 shorter slabs 4" x 4' x 30'.

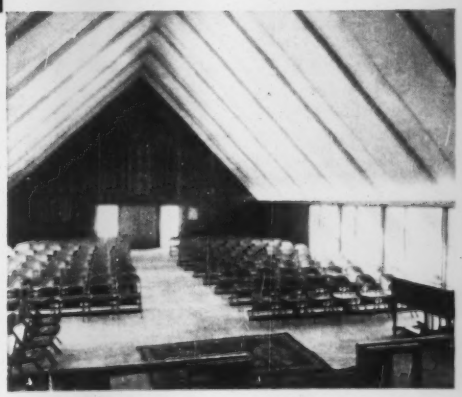
• The St. Ambrose Episcopal Church in West Fort Lauderdale, Fla. is another example of the almost unlimited possibilities of modern precast, prestressed concrete construction.

Just 38 prestressed slabs were required for this unique structure. Cast with plates imbedded at the ends and along the sides, slabs were fitted into slots in the footings, hoisted into place and welded together. The joints were coated with roofing material. That's all there was to it.

By eliminating conventional walls and roof, this technique resulted in substantial savings to the owner. The appearance of the completed job speaks for itself.

The prestressed slabs were made with Lehigh Early Strength Cement at the R. H. Wright & Son, Deerfield plant. Its use helps them save time and money in producing a variety of top quality concrete units.

On the interior, prestressed slabs were sprayed with an acoustical plaster.



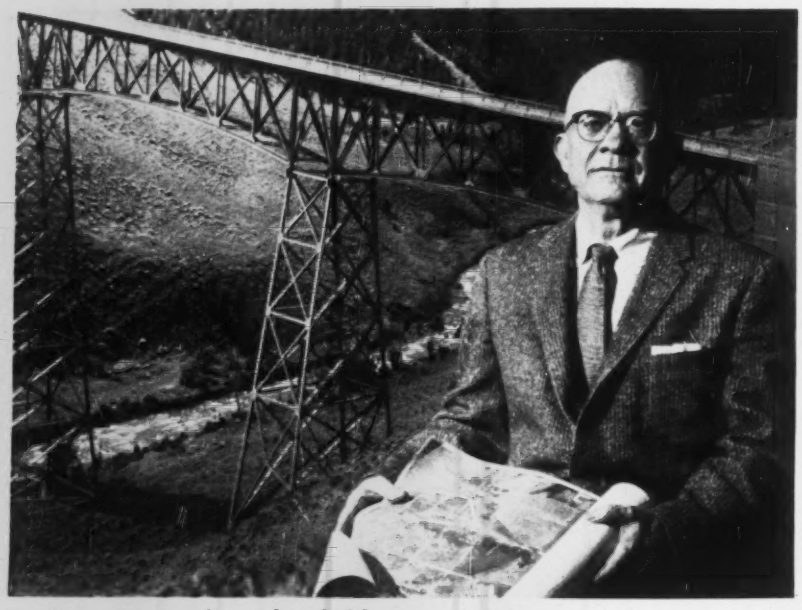
NEW CHURCH DESIGN SHOWS VERSATILITY OF **PRECAST, PRESTRESSED CONCRETE**

Ample daylight flows into the church through the 5 open spaces on each side.

ARCHITECT: Johnson and McAlpine, Ft. Lauderdale, Fla.
CONTRACTOR: Quick Quality Construction, Inc., Ft. Lauderdale, Fla.
PRECAST, PRESTRESSED CONCRETE UNITS MANUFACTURED BY: R. H. Wright & Son, Ft. Lauderdale, Fla.

- LEHIGH EARLY STRENGTH CEMENT
- LEHIGH PORTLAND CEMENT
- LEHIGH AIR-ENTRAINING CEMENT
- LEHIGH MORTAR CEMENT

LEHIGH PORTLAND CEMENT COMPANY
Allentown, Pa.



For bringing credit to his field, a . . .

University Honors Guy H. James

Oklahoma State University has named Guy H. James to its Engineering Hall of Fame. Each year the university's engineering faculty selects an engineer who has brought great credit to the field by his professional and civic activities.

Mr. James, president of the Guy H. James Construction Co., Oklahoma City, counts as some of his firm's most important jobs participation in the Fiber Dam in northern Montana, in Tinker Air Force Base in Oklahoma City and in Cherry Creek Dam near Denver. His company constructed two sections of the Oahe Dam on the Missouri River near Pierre, S. D.

"I guess the most exciting job and the one I'm most proud of was the first big project I ever had," says the 59 year-old civil engineer. "You can build a lot of structures, but that first job—its challenge always sticks at the top of your achievement list."

His first major work was the construction, in 1938, of a $651,000, three-lane bridge over the South Canadian River at Purcell, Okla.

From that project his firm moved on to become one of the principal contracting companies in the Southwest.

Mr. James began his engineering education at Kansas State College, but had to leave after 2½ years. Working as a resident engineer with the Oklahoma State Highway Commission and studying simultaneously, he finally received his degree in civil engineering from Oklahoma State University in 1929. He remained with the highway commission for the next two years.

Mr. James formed his own company in 1931. Since then he has built a reputation that has carried him to the presidency of the Associated General Contractors of Oklahoma and the Oklahoma section of the American Society of Civil Engineers.

Mr. James is chairman of the Industrial Advisory Board at Oklahoma State University. He served on the state's Board of Regents for Higher Education for a nine-year term and he was a member of the governor's commission on higher education. He was the first chairman of the Oklahoma Water Resources Board.

Jerome W. Komes Elected Vice President at Bechtel

Jerome W. Komes has been elected senior vice president of Bechtel Corp., San Francisco, and executive vice president in the company's international subsidiaries and affiliates.

Mr. Komes will have the senior operational responsibilities for the overseas activities of Bechtel. He will take over many of the duties of the late George S. Colley, Jr., who was killed last July during the revolt in Iraq.

Careers

Business

Richard N. Benjamin has been elected president of Stone & Webster, Inc. **Whitney Stone** was elected chairman of the board and chief executive officer of the company. **Peter J. Rempe** was elected president of the firm's service corporation.

Dallas Young will retire from MacDonald, Young & Nelson, Inc., Oakland, Calif., after 13 years with the firm. He has been engaged in general contracting work for 45 years. Mr. Young is a past president of the Northern California Chapter of Associated General Contractors and is currently a national director of AGC.

James G. Mitchell has been elected executive vice president of the H. L. Gentry Construction Co., Jackson, Mich., and **Robert R. Groth** has been named to succeeed him as manager of the firm's Perrysburg, Ohio, division.

Air Commodore H. B. Long, who was attached to NATO headquarters in Paris since 1955 in connection with supervision of its Europe construction program, has joined A. D. Margison & Associates, Toronto, a consulting engineering firm.

A. C. Johnson has been appointed chief engineer of the Elgin, Joilet and Eastern Railway Co., Chicago. He will be succeeded as assistant chief engineer by **R. F. Beck.**

Lindsey, Carter & Associates, Inc., consulting engineers and land surveyors, with offices in Excelsior, Minn., is changing the firm name to Carter, Kreuger & Associates, Inc.

Paul W. Hoffman has joined the Arthur Venneri Company, Westfield, N. J. as the firm's manager of divisions handling chemical, petroleum, and power plant work.

Associations

Peter Braun, vice president of Pearce & Pearce Co., Inc., Buffalo, has been elected president of the Niagara Frontier Builders Association.

Richard O. Hart, a partner in Olson & Hart, Denver, was elected 1959 president of Associated Building Contractors of Colorado.

Conrad Hamann, of Hamann Construction Co., Manitowoc, Wisc., has been elected president of the Wisconsin chapter of Associated General Contractors.

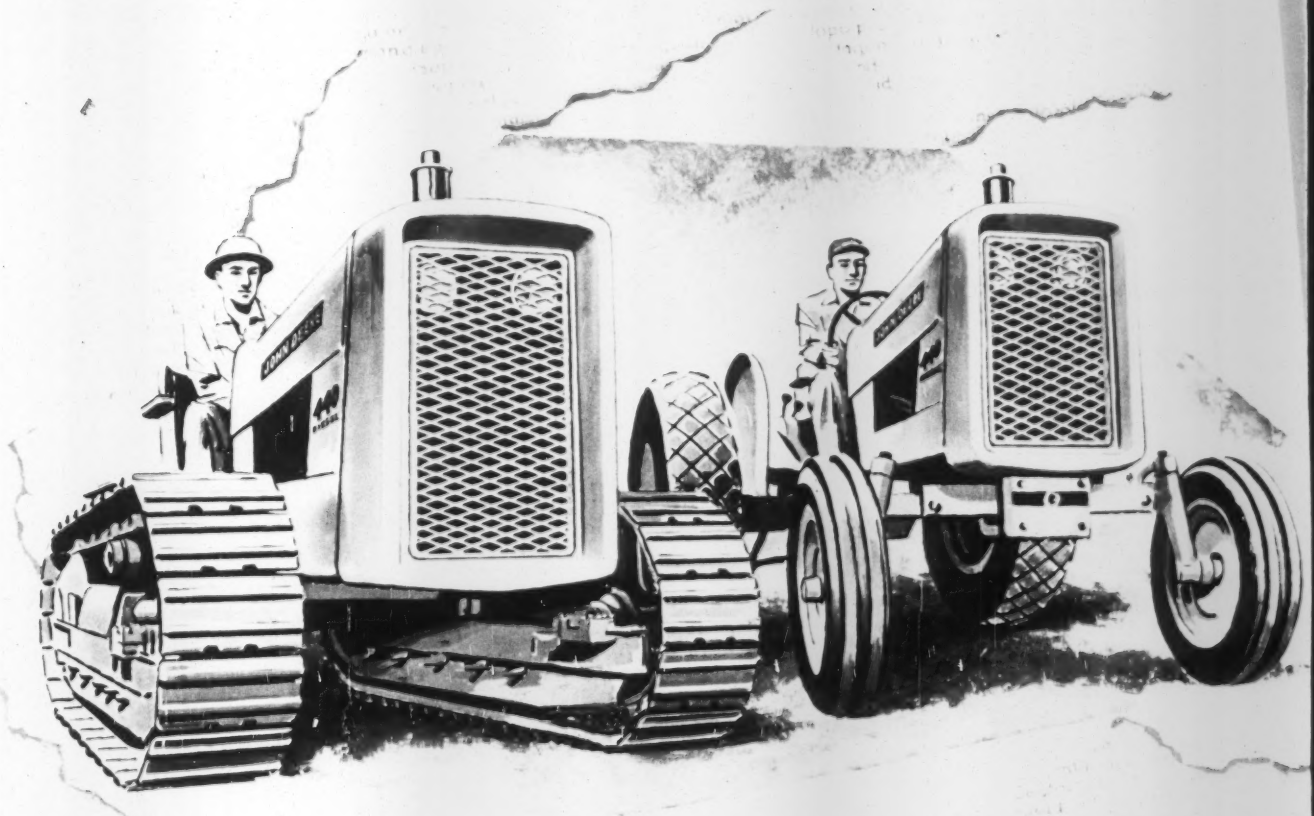
L. S. S. Smith, superintendent of construction for Stone & Webster, Portsmouth, Va., has been elected president of the Virginia section of the American Society of Civil Engi-

Industrial Bulletin

MORE BIG NEWS FROM JOHN DEERE

New DIESEL Crawler and Wheel Tractors added to John Deere Industrial Line

TWO NEW BACKHOES ANNOUNCED



NEW 831 LOADER READY FOR FIELD

John Deere Setting FAST PACE in Industrial Equipment

Now a DIESEL Engine for JOHN DEERE 440 TRACTORS

Bringing you every *Diesel* advantage *Plus 10% MORE POWER!*

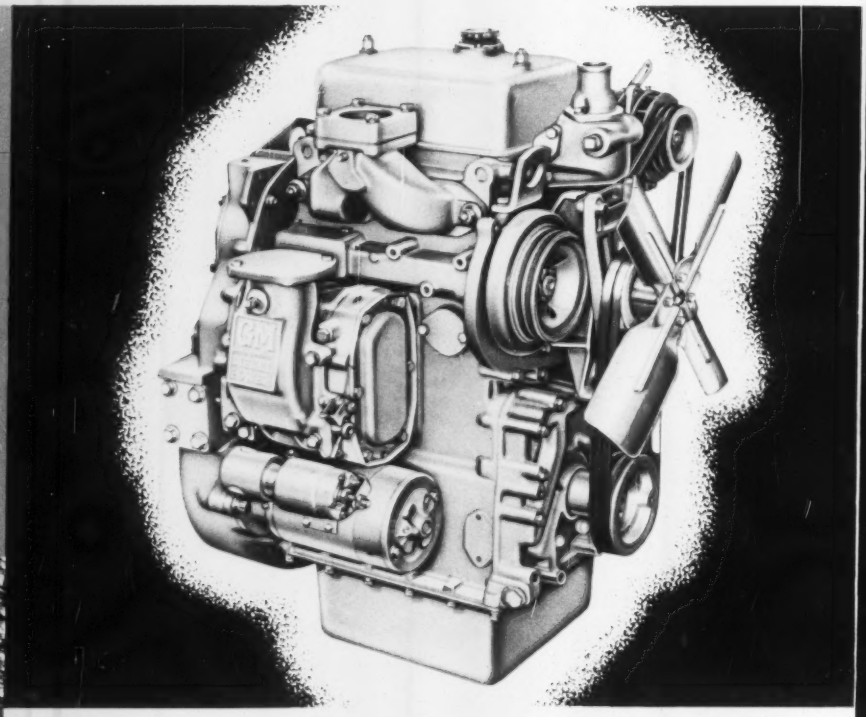
Here it is! The GM Diesel, known throughout industry for its economy, dependability and long service! Power-matched to John Deere "440" Tractors, the engine carries the following specifications:

Design

Engine Type . . . 2-cycle, 2-cylinder
Bore and Stroke . 3-7/8 in. x 4-1/2 in.
Displacement . . 106.1 cu. in.
Compression . . . 17:1

Performance

Rated hp at 1850 rpm . . 33-1/4
Max. Torque at 800 rpm . 108 lb. ft.



"440" Crawler with matching 831 Loader gives you a smooth-working combination for many jobs.

"440" Wheel Tractor with 71 Loader and 5/8-yard bucket does an efficient job of loading.

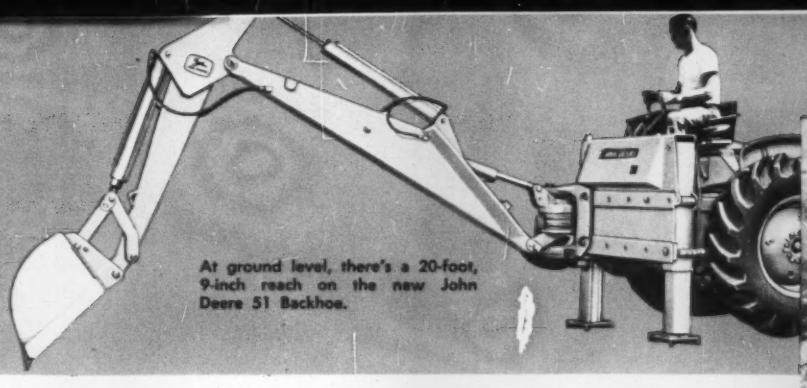
Diesel power and *more* power—10 per cent more than previous "440" Tractors—give John Deere "440" Crawler and Wheel Tractors extra capacity to take on more jobs—make even greater savings in time and fuel—turn out more work per day.

The new John Deere "440" Diesels provide the extra efficiency of a high-compression Diesel engine—plus the fast response of high-torque Diesel performance. In addition, John Deere Industrial Tractors with GM Diesel engines provide the "fire insurance" of Diesel fuel which opens up new construction and materials-handling jobs to the John Deere "440"—in mines, dockyards, and other confined areas.

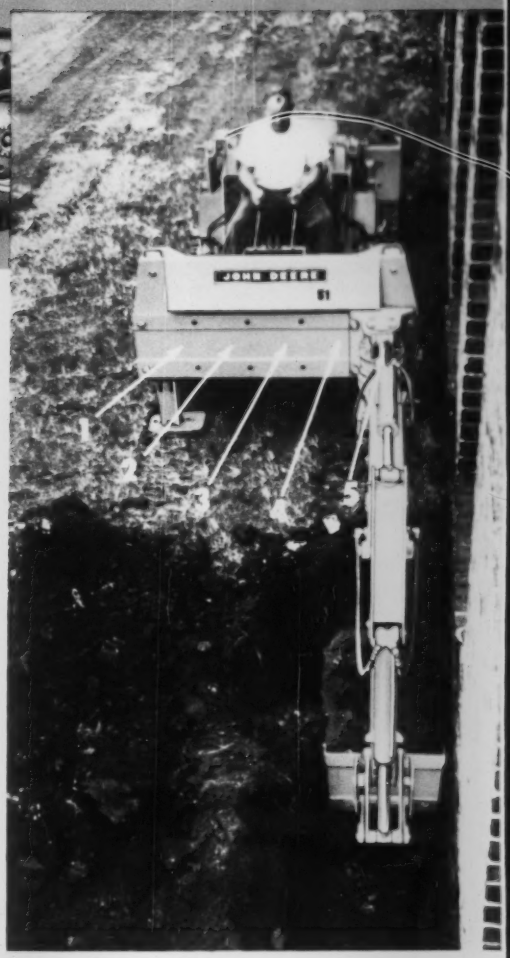
Whatever your reasons for preferring Diesel power, start now—cash in on modern Diesel advantages in a John Deere "440" Crawler or a "440" Wheel Tractor and matched working equipment.

Below: **"440" Crawler with 64 Dozer and Scarifier**—a favorite unit with builders and contractors.

Below: **71 Loader, equipped with blade,** tackles a wide variety of work. "440" Wheel Tractor provides power to spare.



At ground level, there's a 20-foot, 9-inch reach on the new John Deere 51 Backhoe.



Introducing the FIRST 5-Position BACKHOE in the Field...

THE *New* JOHN DEERE 51

One of two great new John Deere Backhoes, the model 51 provides unmatched operating flexibility. Designed to operate from any of five positions, the boom can be shifted with hydraulic power to any position in 15 minutes. One man with a wrench does the job!

In operation, the husky hydraulic cylinders of the 51 provide plenty of "breakout" power for tough or frozen ground conditions. From a working depth as great as 13 feet 6 inches, the bucket rises to a dumping height of 11 feet 9 inches, to load even the largest trucks. Boom swings through a 180-degree arc.

Flush-digging along buildings or fences is simple with the 51 mounted at first or fifth position. Operator has excellent view of both digging and spoil pile. In transporting, end position permits hoe to be folded against tractor to make a compact, well-balanced unit.

...a brand-new center-position BACKHOE

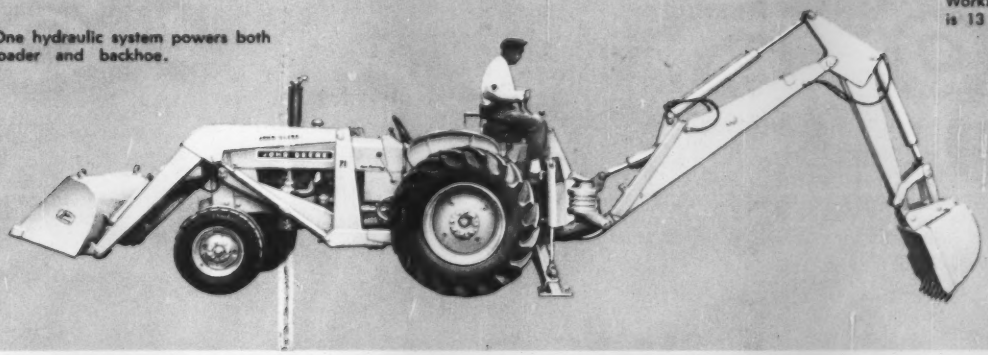
THE JOHN DEERE 50

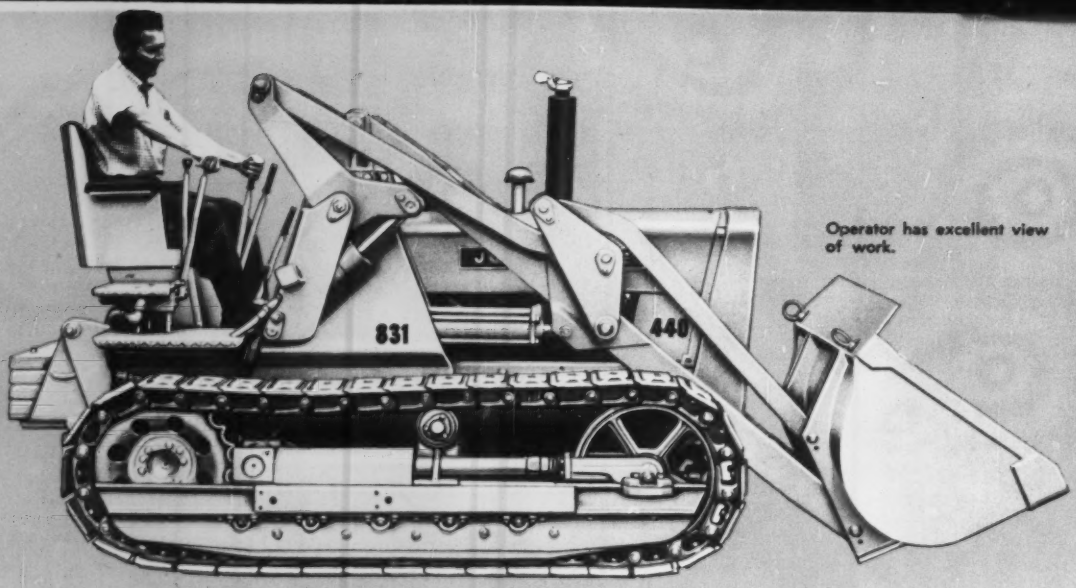
Here's reach and power to tackle any trenching job! Center-mounted boom has a 20-foot 3-inch reach at ground level, swings smoothly through a 205-degree arc by hydraulic power. Just two control levers do the job, while the operator sits in comfort.

Bucket has side-cutting edges and replaceable teeth.

Working depth of the 50 Backhoe is 13 feet 6 inches.

One hydraulic system powers both loader and backhoe.





Operator has excellent view of work.

A new answer to speedy low-cost loading

THE JOHN DEERE 831 LOADER

Take your choice of gasoline or Diesel power, but pick the John Deere 831 Loader for a *new low* in earth-moving costs! High-lift bucket has 7/8-yard heaped capacity, welded cutting edge and spill sheet. Rugged construction plus the husky hydraulic system of the "440" provides pry-out pressure and lifting ability that greatly increase daily work capacity.

When the bucket is dumped from the full-height position, it returns to the ideal 9-degree digging angle by use of the *boom control only*—a great convenience for operators and one of many reasons for the 831's fast cycle time.

In a recent test, the Diesel-powered 831, handling loose soil from a stockpile and working in third speed, filled 20 standard dump trucks in one hour, using only two gallons of fuel.

Check on this new John Deere 831 Crawler-Loader now—start setting your *own* records for low earth-moving costs!

Bucket has a 35-degree roll-back at ground level for great "breakout" power.

Self-leveling bucket has a full-height dumping angle of 50 degrees.

JOHN DEERE INDUSTRIAL DIVISION
Moline, Illinois, Dept.

Please send information on the ☐ "440" Diesel Crawler ☐ "440" Diesel Wheel Tractor ☐ 50 Backhoe ☐ 51 Backhoe ☐ 831 Loader.

Name

Firm

Address

City State

JOHN DEERE
Industrial
Tractors and Equipment

THERE IS A JOHN DEERE Industrial Dealer Near You... Ask him for a demonstration!

neers. He succeeds **Charles E. Via**, of Roanoke.

Lloyd W. Martin, of Reed & Martin Inc., Fairbanks, has been elected president of the Alaska chapter of Associated General Contractors. He is the first resident Alaskan to hold the position since the chapter was founded in 1949.

Henry S. Miller, Director of Streets, St. Louis, has been elected president of the St. Louis section of the American Society of Civil Engineers. His predecessor was **V. C. Hanna**, chief engineer of the Terminal Railroad Association.

J. Russell Cooper, assistant chief engineer of the Indiana State Highway Department, has been elected president of the Indiana section of the American Society of Civil Engineers. The outgoing president is **J. I. Perrey**, chief engineer of the Indiana Flood Control and Water Resources Commission.

C. P. Calaway, of Toledo, has been elected to succeed **H. G. Rhoten**, of Columbus, Ohio, as president of the Ohio Highway chapter of Associated General Contractors.

Public Works

Craig L. Barnhardt, civil engineering graduate of N. C. State College and city manager of New Bern, N. C., has been named city manager of Jacksonville, N. C.

Lynn B. McKnight, former president of the Chain Belt Co., Milwaukee, has been appointed to the Milwaukee County Expressway Commission. He succeeds **Robert Stevenson**, president of Allis-Chalmers Manufacturing Co. **Robert Johnson**, president of Siesel Construction Co., Milwaukee, has been reappointed to the commission.

William O. Davies has been appointed head of the engineering department of Englewood, Colo.

Cecil Mongerink has been named to succeed **Roy Blaine** as city civil engineer of Bellefontaine, Ohio.

R. D. Field has been named chief of the engineering division for the Southwestern Division, U.S. Corps of Engineers, Dallas. Mr. Field succeeds **R. C. Baird**, who becomes special assistant to Brig. Gen. William Whipple.

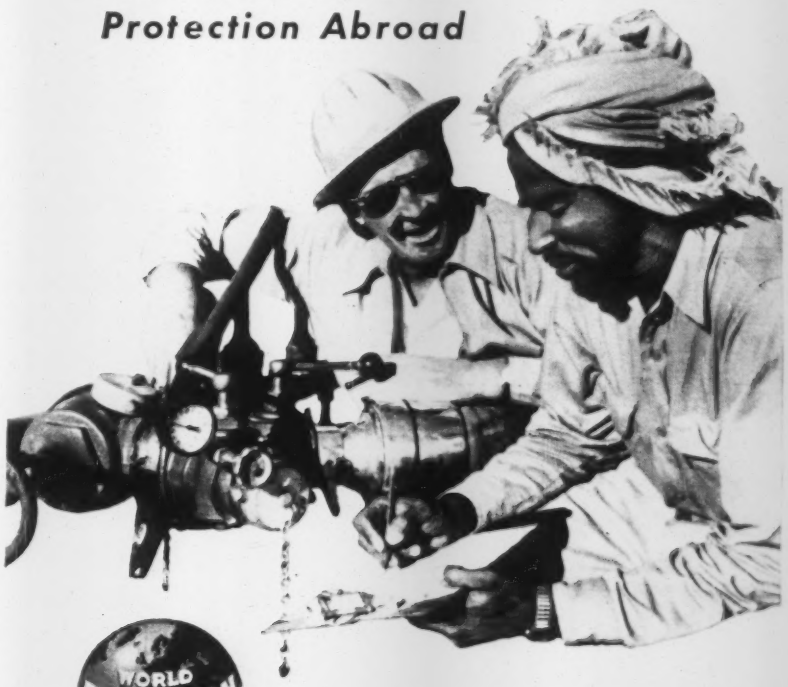
Sam Engelhardt, Jr., has been appointed director of the State Highway Department of Alabama. Mr. Engelhardt, a member of the state legislature, succeeds **Herman L. Nelson**.

Education

Prof. Jan J. Tuma has been appointed head of the civil engineering school in the college of engineering at Oklahoma State University at Stillwater. He has been with OSU since 1952.

CHOOSE A SOUND LEADER

For Your Insurance Protection Abroad



WORLD PROTECTION WIDE

Look at it this way. To be properly safeguarded against loss your business overseas needs property, casualty and surety protection that's expertly planned . . . fits local customs and conditions . . . and conforms to foreign laws and insurance requirements. That's why so many outstanding companies rely upon AFIA and its world-wide organization.

We'll be glad to send you an interesting and informative booklet about foreign insurance and AFIA facilities. Just drop a line to our New York office.

Ask your insurance agent or broker to discuss your foreign insurance problems with AFIA.

AFIA

AMERICAN FOREIGN INSURANCE ASSOCIATION

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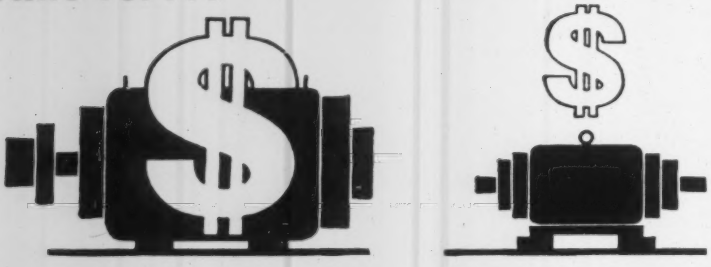
DALLAS OFFICE . . . . . 400 Vaughn Building, 1712 Commerce Street, Dallas 1, Texas
LOS ANGELES OFFICE . . . . . 3277 Wilshire Boulevard, Los Angeles 5, California
SAN FRANCISCO OFFICE . . Russ Building, 235 Montgomery Street, San Francisco 4, California
WASHINGTON OFFICE . . . . Woodward Building, 733 15th Street N. W., Washington 5, D. C.

An association of leading American capital stock fire, marine, casualty and surety insurance companies providing insurance protection in foreign lands

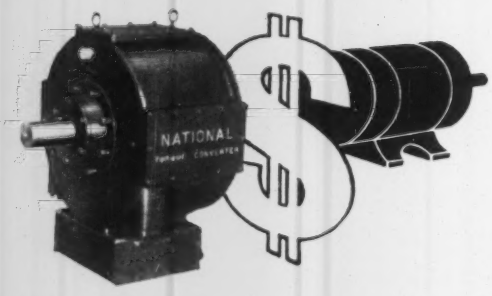
When electrically driven equipment calls for...



a special, costlier motor to start things

but only a low-cost motor to run them

Why not try this...



A NATIONAL Torque Converter to give high starting torque

with your cost-saving motor to keep things moving

NATIONAL® Torque Converters give you "big motor" torque from small motor investment

Like a car in heavy traffic, the work-cycle of a lot of heavy, electrically-driven equipment is stop-and-go, stop-and-go.

If the motor is selected to take care of *running* requirements, it won't have the starting torque needed to pick up heavy loading fast. If the motor is selected for *starting* requirements, it is likely to cost considerably more—both to buy and to run.

The best answer is to install the more economical motor—and let it drive through a NATIONAL Torque Converter. The converter will multiply the motor's torque for picking up the loads, ease the shocks and stresses of operation, bring economy in first cost and day-to-day service. NATIONAL Torque Converters are available in a range of capacities from 100 to 1000 HP. For detailed technical information, write:

THE NATIONAL SUPPLY COMPANY

Subsidiary of Armco Steel Corporation

TWO GATEWAY CENTER, PITTSBURGH, PA.

Obituaries

Sir William Halcrow, 75, head of one of Great Britain's largest and best known consulting firms. Sir William conducted a world-wide practice since formation of the firm following World War I. He had earlier worked for several large contractors on hydroelectric and harbor projects in Europe and the Far East. In World War II he was chairman of the board of engineers that designed the Phoenix units for the Mulberry artificial harbors used in the invasion of France.

As head of Sir William Halcrow and Partners, he was connected with hydro projects all over the world including the huge Kariba and Volta schemes in Africa. His firm was also responsible for many miles of tunnels in Great Britain and, during the war, for deep underground shelters in London. Practically every type of heavy construction project, except large bridges, were included in his consulting practice at one time or another. In 1946, Sir William was president of the Institution of Civil Engineers.

Fred Graber, 62, project manager for The H. K. Ferguson Co. on the Atomic Energy Commission project, in Oak Ridge, Tenn., and earlier with the Kimberly-Clark Corp. He was an engineering graduate of the university at Graz, Austria. During World War II, he was commander of the 123rd Seabee Battalion.

Robert P. Simmons, 63, president of Paul Simmons Co., Dallas engineers. A native of Alabama, he was a graduate of Alabama Polytechnic University.

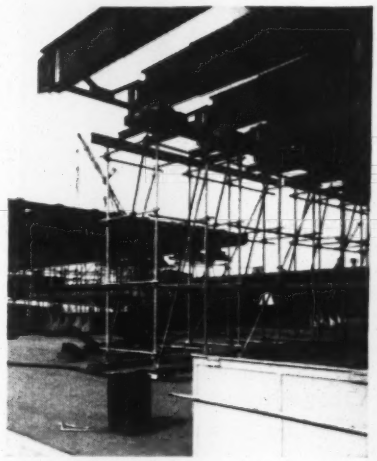
Murray J. Backus, 70, a project manager and construction engineer with the Public Works Office, Navy Department, San Bruno, Calif.

Harry C. Gallimore, 72, president of F. A. Pease Engineering Co., Cleveland municipal planning and engineering firm.

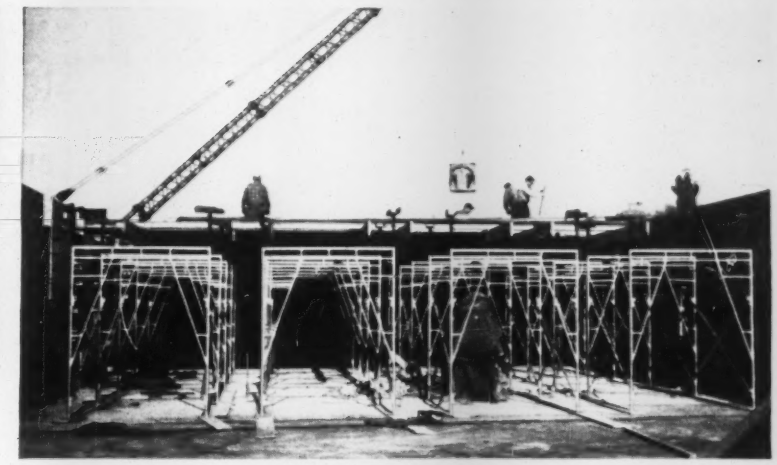
Charles H. Curto, 70, president-treasurer of the Curto Construction Co., Cleveland water and sewer contracting firm.

Harwood Beebe, 73, construction engineer and founder of the Hardwood Beebe Co. of Spartanburg, S. C. He had served as chairman of the State Board of Engineering Examiners and as president of the South Carolina Society of Engineers and the South Carolina section of the American Society of Civil Engineers.

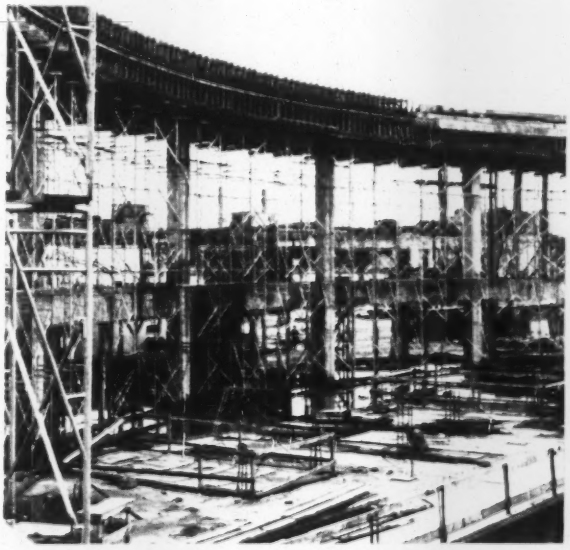
Shoring Methods . . . by Patent Scaffolding Co.



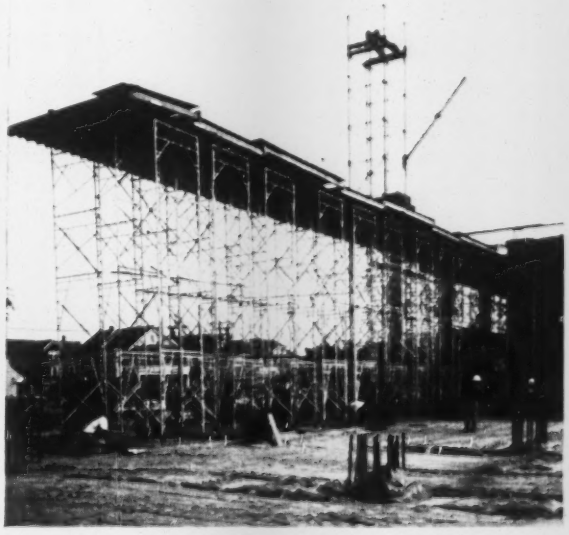
CUTS COSTS 20%—"TubeLox"® Steel Shoring "towers" permit setting several dozen steel girders a day on overpass in downtown St. Louis. Instead of setting and riveting one girder at a time, thereby making iron workers dependent upon movement of cranes, St. Louis Steel Erection Co. keeps workers on the job, eliminates lost motion, and cuts working days by 20%.



NEAT, QUICK ROOF SLAB SHORING—Simple, easy-to-erect frames of "Trouble Saver"® Sectional Steel Shoring are rapidly set in place to support the formwork for the slab roof of the new Southwest Acres School, Thompsonville, Conn. Only 700 6'6"-high frames are required. Spaced 7' apart with 3' to 4' spacing between rows, these "Trouble Saver" Shoring frames adequately support all the load encountered. Notice how the free standing sections are neatly arranged ready for the placement of forming lumber. U-heads placed in the tops of the scaffolding frames are designed to hold the wood stringers. 20" adjustable leg attachments provide the precision shoring height required. Detailed layouts, supplied by PS Co., make assembly on the job site quick and easy. John Romano Contractors, general contractor.



SUPPORTS 3165 LBS. PER FOOT—Here, "Trouble Saver" Sectional Steel Shoring components are shown arranged to support a 242' diameter concrete beam, 47' above ground. Beam is 5'8" wide, with irregular depth to 4'6". While the height to which this shoring is erected is interesting, the major importance is the fact that it is assembled to carry a load of 3165 lbs. per lineal foot of beam. Utica (NY) Memoral Auditorium. Sovereign Construction Co., Ltd., general contractor.



SLIDING SYSTEM FOR MINIMUM EQUIPMENT—To gain the substantial cost advantages of minimum equipment, Frank Briscoe Co., Inc., here uses sectionalized set-ups of "Trouble Saver" Shoring which can be slid from pour to pour for the 8" floor slab of the new 250' by 275' Western Electric Co. Bldg. Boston. 22' x 125' shoring sections, with forms and dropheads in place, are slid forward between columns by cables attached to wood sills. Bulldozer used for power. Photo shows one narrower section just after movement.

Complete scaffolding equipment and engineering service offered through nation-wide sales offices or representatives. Look under Patent Scaffolding in the Yellow Pages for your nearest source.

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One of the world's northernmost large-diameter pipe lines is located near Fairbanks, Alaska, where United States Smelting Refining and Mining Company has been mining gold since 1928. The company's hydraulic stripping operation calls for a tremendous volume of water, most of it flowing 90 miles from the Chatanika River.

While the supply line consists chiefly of open ditch, over 6 miles of steel pipe carry water across fifteen streams and valleys. The longest crossing totals 7962 ft. The pipe is of lock-bar construction, in 30 ft lengths, 46 and 56 in. ID. Walls vary from ¼ in. to 7/16 in.

The line has been in service throughout the operating seasons (150 days average) since 1928, except for a wartime shutdown. Despite the unusually high heads, up to 544 ft, and temperatures as low as 66 deg below zero, the pipe has given excellent service. Company officials report that leakage has been minor, and there has been no measurable loss of flow capacity.

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Vermont Road Resurfaced

Eleven bidders compete for job of resurfacing gravel road recently added to state highway system

Cost of resurfacing averages $40,736 a mile for this 1.648 mile stretch of the Morristown-Worcester Road in Elmore, Vt.

It is a 22 ft wide gravel road recently added to the state highway system. A. H. Lavigne is resident engineer in charge of the project.

The $67,133 award to Heins-Coates Construction Co., Burlington, by the Department of Highways, is 13% under the engineer's estimate.

The job includes grading, drainage, subbase with a double tack coat of bituminous material with peastone seal surface course.

The contractor furnishes all materials.

Wages on the job include: shovel and crane operators $2.00 and tractor operators $1.90, both plus $15 a week traveling allowance. Common laborers are paid $1.25. The work week is 54 hours, with time and a half for overtime.

The eleven bids went like this:

1C Heins-Coates Constr. Co., Burlington, Vt.	$67 133
2 Wm. L. Lyon, Northfield, Vt.	67 873
11 Duncan U. Hunter, Claremont, N. H.	85 181
EE Vermont State Highway Dept.	77 247

Bids: 9-12-58 Items	Unit	Quantity	Unit Prices 1C	2
Excavation, common	cy	7 900	$0 55	$0 57
solid rock	cy	400	4 50	2 75
trench, earth	cy	725	1 50	1 50
rock	cy	105	4 00	9 00
channel, uncl	cy	15	2 00	1 50
structural	cy	80	2 50	3 00
Borrow	cy	16 150	0 45	0 40
Clear & grub	ls	job	2 000	1 700
Roadway patrol maintenance	day	16	50 00	50 00
Dust control	Mgal	160	2 00	3 00
Subbase gravel	cy	18 500	0 95	0 90
Gravel overhaul, modified	cy mi	55 500	0 10	0 10
backfill pits	strip cy	100	2 50	3 00
Dble tack coat, bit matl with peastone & stone grits seal, refined tar prime coat cutback asph double seal coat	gal	21 000	0 50	0 57
Cement rubble masonry	cy	30	40 00	47 00
Corr galv met pipe, asph ctd, 15"	lf	530	3 85	4 37
18"	lf	240	4 30	4 85
21"	lf	94	5 50	5 49
72"	lf	74	45 00	41 91
underdrain, 6" perf, modified	lf	500	2 50	2 50
Pipe culverts relay	lf	400	1 00	1 50
Riprap bank protection	cy	50	15 00	11 00
2-cable guard rail	lf	1 360	1 85	1 70
anchors	ea	8	18 00	45 00
Wood marker posts	ea	40	5 00	5 00
Project markers erect	ea	2	25 00	30 00
Winter rye	lb	700	0 50	0 40
Seeding	lb	50	2 00	1 00
Sodding	sy	25	3 00	6 00
Comm fertilizer for grass	lb	200	0 20	0 40
Topsoil	cy	5	4 00	3 00
Mulch, modified	t	10	75 00	75 00

Complete: 8-1-59

Low Bid on Embankment Gets Arkansas Levee

Only two bidders competed for this levee construction job along the Mississippi River at Whitehall, Ark., for the Corps of Engineers, Memphis, Tenn. Frank Stanford, Memphis, got the $187,890 contract on his low bid of 32¢ a cu yd for 510,000 cu yd of embankment, which accounts for 87% of the total contract. The award was 21.4% above the engineer's estimate.

1C Frank Stanford, Memphis, Tenn.	$187 890
2 Pioneer Contracting Co., Inc., Memphis	197 916
EE Corps of Engineers, Memphis, Tenn.	154 710

Bids: 9-10-58 Items	Unit	Quantity	Unit Prices 1C	2
Clear & grub	ls	job	$6 000	$9 700
Embankment	cy	510 000	0 32	0 3371
Sodding	ac	100	130 00	80 00
Riverside slope restoration	ac	25	80 00	135 00
Fertilizing	ac	123	30 00	10 00

Concrete for Ohio Sewer Wins Over Metal Alternate

Hamilton, Ohio, Department of Public Works elected to pay an $11,678 premium for 1,580 lin ft of 54- to 72-in. sewer, when it selected reinforced concrete over the corrugated metal pipe alternate for sewer improvements. Jack Kirch is director of Public Works; Consoer, Townsend & Associates, Chicago, is the consultant.

The total contract, $118,435, went to Charles H. Shook, Dayton. Materials accounted for 65.9%.

Minimum wages include: trench excavator operator, $3.32; concrete finisher, $3.20; tractor operator, $3.32; carpenter, $3.20; common laborer, $2.33.

	Conc Pipe	CMP Alt.
1 Chas. H. Shook, Dayton	$118 435C	$106 757
2 Antenen Constr. Co., Hamilton	143 197	132 991

Bids: 10-28-58 Items	Unit	Quantity	Unit Prices 1C	2
RCCP sewer, 54"	lf	220	$27 00	$31 50
on RC cradle	lf	280	33 00	43 00
Alt CMP sewer, 54"	lf	500	23 42	31 40
RCCP sewer, 72"	lf	1 080	47 00	54 00
Alt CMP sewer, 72"	lf	1 080	39 30	48 25
CIP sewer, 8"	lf	155	7 40	15 40
Remove existing headwall	ls	job	360 00	612 00
Reinf conc junct chamber	ea	1	2 500	2 972
intercepting & gate chamber	ea	1	13 185	16 309
headwall	ea	1	1 750	2 500
MH base, tp I, on 54" sewer	ea	1	600 00	1 000
Manhole sidewall, 48" ID	vf	5	20 00	17 50
CI manhole frames & covers	ea	1	90 00	100 00
Muck remov	cy	1 400	0 75	0 80
Foundation material, select	cy	1 400	1 00	1 10
Earth embankment	cy	6 660	0 95	1 15
Riprap	cy	50	24 00	5 00
Conc cradle & or encasement	cy	10	42 00	50 00
Conc, cl D, extra	cy	10	92 00	65 00
Reinforcing steel, extra	lb	500	0 14	0 15
Excavation, rock	cy	5	18 00	4 00
Reinf conc gate chamber	ea	1	2 500	4 115
Manholes, existing cap	ea	12	220 00	330 00
plaster exterior	ea	1	40 00	150 00
Conn from existing 16" industrial sewer to 42" intercept	ls	job	12 300	11 674
Storm sewer, 10" f&i	ls	job	3 500	4 200

Completion schedule: 365 calendar days

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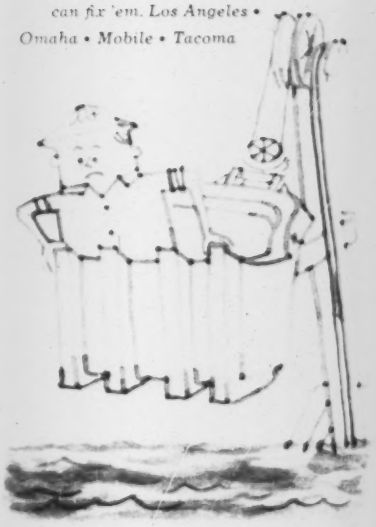

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Materials and Labor Prices

Market Quotations by ENR Field Reporters

See following ENR issues for OTHER PRICES:

- Wood Products, Glass, Explosives, Chemicals: Last, Dec. 18; Next, Jan. 22
- Clay Products, Lime, Plaster, Paint, Roofing: Last, Dec. 25; Next, Jan. 29
- Wage Rates, Building Board Lath, Insulation: Last, Dec. 25; Next, Jan. 29
- Cement, Aggregate, Ready-Mixed Concrete, Asphalt: Last, Jan. 3, Next, Feb. 5

IRON AND STEEL PRODUCTS—PER 100 LBS. BASE MILL PRICES

	STRUCT SHAPES—	PLATE CARBON STEEL	REINF BARS* billet	RIVETS ½-in. structural	SHEET PILING Base	STEEL RAILS Per Net Ton Standard	STEEL RAILS Per Net Ton Light	TRACK SUPPLIES Angle Bars	TRACK SUPPLIES Std Spikes	TRACK SUPPLIES Tie Plates	TRACK SUPPLIES Track Bolts
Birmingham Area	$5.50	$5.30	$5.675	$12.25	.....	$110.50	$130.00	$6.975	$9.75	$6.60	.....
Chicago Area	5.50	5.30	5.675	12.25	$6.50	110.50	130.00	6.975	9.75	6.60	.....
Pittsburgh Area	5.50	5.30	5.675	12.25	6.50	110.50	130.00	6.975	9.75	6.60	$14.75
Buffalo Area	5.50	5.30	5.675	12.25	6.50	110.50	130.00	6.975	9.75	6.60	14.75
Cleveland	.....	.....	5.675	12.25	6.50	.....	.....	.....	.....	.....	14.75
Youngstown Area	.....	.....	5.675	.....	.....	.....	.....	.....	9.75	.....	.....
Geneva	5.50	5.30	.....	.....	.....	.....	.....	.....	.....	.....	.....
Los Angeles	6.20	.....	6.375	.....	6.50	.....	.....	.....	9.75	6.75	.....
Pueblo	.....	.....	.....	.....	.....	.....	.....	69.75	9.75	6.60	.....

* Fairless Works, $5.575.

IRON AND STEEL PRODUCTS—F.O.B. WAREHOUSE, PER 100 LBS., BASE PRICE

	STRUCTURAL SHAPES Per 100 lb. base price	STRUCTURAL SHAPES Extras, New York:	REINFORCING BARS Per 100 lb., base price 5 tons to carload lot New billet	REINFORCING BARS Rail steel	REINFORCING BARS Extras, New York:	EXPANDED METAL LATH Per 100 sq. yd., carload lots Std. diamond mesh, 3.4 lb.	EXPANDED METAL LATH Std. ribbed 3.4 lb.	WELDED FABRIC REINFORCING Per 100 sq ft., carload lots fob mill
Atlanta	$9.40		9.25	$9.01		$52.00	$57.00	
Baltimore	9.675		8.70‡			42.00	46.50	
Birmingham	9.00‡		8.99‡	8.99‡		50.00p K	76.00p K	
Boston	10.01a K		8.75 K	8.75 K		46.50 K	51.00 K	
Chicago	9.15E		7.16gu	7.16gu		52.00‡	63.00‡	
Cincinnati	9.56akt		9.04tr	.....		44.50mn K	49.00mn K	
Cleveland	9.39st		7.14ct	.....		47.50 KL	52.00 KL	
Dallas	10.40M		9.00	9.00		44.00w	48.50w	
Denver	10.16		9.25c	.....		57.00n	63.00n	
Detroit	9.56		7.15g	.....		55.00	63.00	
Kansas City	9.31a		8.10 N	.....		49.00	60.00	
Los Angeles	8.90dft		7.35fr	.....		57.00r	63.00r	
Minneapolis	Q		9.26t	9.26t		42.50 K	49.00 K	
Montreal	7.90–8.80xC/8.20–8.90A		7.00/7.50FG	7.00/7.50FG		65.70A	70.20A	
New Orleans	.....		8.00gkz	.....		47.00	52.00	
New York	9.84‡a		8.60y	8.60y		52.00n	59.00ne	
Philadelphia	9.25/9.25M		8.03/8.25	.....		46.15‡	48.52‡	
Pittsburgh	9.00y		7.35y	.....		46.00‡ru	49.50‡ru	
St. Louis	9.48st		8.80uez	8.80uez		61.00uez K	62.00uez K	
San Francisco	9.90		9.85y	.....		52.00	56.00	
Seattle	9.80aD		8.85DM	.....		67.50mD	72.00mD	
Toronto	9.20H		7.85	7.85		46.00qgJ	49.00qgJ	

EXTRAS, per cwt.—♦Quantity (applies to L/L shipments only): under 1,000#, +$1.80; 1000-1999#, +90¢; 2000-4999#, +50¢; 5000-9999#, +40¢; 10,000-19,999#, +30¢; 20,000-29,999#, +20¢; 30,000 & up, none. ♦Size: under ½", +10¢; ½" to ⅞", 40,000# & up, none. ♦Size: ½" to ⅞", light, +$2.50; #3 +$1.40; #4 +$1.00; #5 +70¢; #6, #7, #8, +40¢; #9, #10, #11 +30¢. ♦Bending: heavy, +$2.20 (except in New York City and surrounding metropolitan area where bending must be done on the job). ♦Engineering (details and placing from designs by others): over 500 tons, +45¢; 200-499 tons, +50¢ but not over $4500; 75-199 tons, +65¢ but not over $2000; 20-74 tons, +75¢ but not over $375; 5-19 tons, +85¢ but not over $300 under 5 tons, +$1.00 but not over $85. Min. charge $25. Design only: +60¢

‡ Delivered. ** Aver. of Canadian & American. •a 2000-9999#, fob city •b 10,000-15,999#, fob city •c 20 tons or over •d 10,000-29,999# •e Intermediate struct'l •f Incl. delivery in free zone •g CL •h list price; dominion tax exempt; add provincial and municipal taxes •i add dominion, provincial and municipal sales taxes •j intermediate and hard grade •k fob city •l delivered; contractor to do unloading •m copper alloy •n LCL •o asphalt coated •p 500 sq. yd. or more. •q 2.5 lb •r less 2% disc. for cash •s 2,000-4,999# •t less ½% disc. 10 days •u add 7.5c switch •v incl 15c del. •w truck lots •x add 2% sales tax •y add 15c del. •z add 10c del. •A American made. •C Canadian made. •D 1% for cash. •E 30,000# or over. •F Federal tax exempt for bldgs. •G add 10c del. •H 8.85 without tariff charges. •I 3 lb $60.00. •J 3 lb $66.00. •K less 2% disc. 10 days •L F.o.b. Youngstown plant •M 5,000-9,999# •N 2,000-19,999# •O 100 sy lots •Q no quote avg •R; revised.

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Atlanta	130.5	$1.61	1.69	$2.36	2.48	$0.53	$0.98	$	$	$209.00s	$334.00	$0.92m K	$3.68m K
Baltimore	140.4	1.61	1.69	2.19	2.30	66$	1.28	5.08T	12.71e	187.80	289.20	1.01	2.75m
Birmingham	125.8	1.56	1.69	2.26	2.37	48r	90r	3.88ru	10.89ru	273.00mr	462.00mr	1.25	2.75
Boston	143.5	1.63	1.71	2.19	2.30	78¼qrtL	1.51½qrtL	6.225qrtM	.....	215.40mqr	330.60mqr	1.56gA	3.47g
Chicago	140.9	1.61	1.69	2.19	2.30	93	1.78	7.52	21.16	220.00B	330.00B	1.30	4.00
Cincinnati	135.5	1.63	1.71	2.19	2.30	66½rt	1.28½rt	4.90½rt	12.50½r	240.00r	370.00r	85rAB	3.25rAB
Cleveland	141.7	1.63	1.71	2.19	2.30	79¾tdBC N	1.48½tBC	4.77tBC	12.50½tBC	155.40mBC	240.60mBC	1.20	4.55
Dallas	137.8	1.63	1.71	2.26	2.37	55½‡B	95½‡B	4.40½‡B	9.75½B			1.21BD	2.52BD
Denver	148.2	1.71	1.80	2.36	2.48	48n	87n	3.73n				75m	2.75m
Detroit	142.1	1.61	1.71	2.19	2.30	90n	1.70n	6.80n	18.50n	182.00m	280.50m	1.10	4.05
Kansas City	138.5	1.61	1.71	2.26	2.37	61r	1.10⅝r	5.69⅝r	12.08r	278.00r	493.00r	95r	3.25r
Los Angeles	148.6	1.70	1.79	2.19	2.30	74bl	1.61bl	6.42bl	15.36bl	370.00l	530.00l	1.176rE	3.486rE
Minneapolis	149.9	1.67	1.75	2.26	2.37	93aB	1.63aB	7.36½aB				2.19DFH	6.31DFH
Montreal				1.13¼	2.00y	7.00y	13.50u	288.00	545.00	1.17	3.11‡
New Orleans	133.3	1.61	1.69	2.26	2.37	52S	0.98S	5.21		210.50p	468.00	1.41tl	3.705tl
New York	138.7	1.63	1.71	2.19	2.30	1.02	1.94	7.58	19.48			1.50‡B	3.60‡B
Philadelphia	138.0	1.61	1.69	2.19	2.30	68	1.31	5.13r	14.25r	300.00‡	350.00‡	1.75h	4.20h
Pittsburgh	142.9	1.63	1.71	2.19	2.30	60Z	1.16	8.14	22.17	190.00	295.00	1.66D	3.93D
St. Louis O	136.9	1.61	1.69	2.26	2.37	62r	1.15r	4.92r	2.68r	200.00r	400.00r	1.45‡	3.10h
San Francisco	148.6	1.70	1.79	2.19	2.30	78tl	1.60tl	6.72tl	16.36tl	320.00‡	560.00‡	1.05	3.30
Seattle	149.0	1.71	1.80	2.19	2.30	72bk	1.50bk	6.84k		255.00‡ck		1.95ky	4.75ky
Toronto				80F		1.50F	6.00F			157.00F	280.00F	92F	3.21F

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***WROUGHT STEEL PIPE**
(Full standard weight)
Discount from list; see footnote

3½ to 6 in.	Lap Weld*	Galv.	%				
	Butt Weld*	Black	%	3 25a	+11 00a	.....	.....
2½ & 3 in.	Butt Weld*	Galv.	%			+14 50a	
		Black	%	3 25	+15 50a	2 25ab	
		Galv.	+3 50			+14 50a	
		Black	+3 50			95r	3 25r
		Galv.	list†			75m	2 75m
Mill	Lorain, Ohio	Black	13 75	13 75	+3 50	3 25	+14 50a
	Alabama Pt., Ala.	Galv.	13 75	13 75	+3 50	3 25a	+14 50a
	Sparrows Pt., Md.	Black	17 25	13 75	list†	3 50d	
	Benwood, W. Va.			13 75	+3 50	3 25	+14 50a
	Youngstown, O.			13 75	+3 50	3 25a	+14 50a
	Indiana Harbor, Ind.		12 75	13 75	+4 50	2 25ab	+9 75ab
	Sharon, Pa.			13 75	+3 50	3 25ad	+14 50ad
	Wheatland, Pa.			13 75	+3 50	3 25a	+14 50a
	Etna, Pa.			13 75	list†	3 50d	
	Fontana, Calif.		0 75	+15 50b	+9 75ab	+27 50ab	

* Threaded and coupled. d 3½ to 4 in. † Continuous weld. e 6 to 12 in. f Effective 12-1-58 c 8 to 12 in. and 6 in.

*** WROUGHT STEEL PIPE:** Deduct discounts shown above from the following standard list consumers carload prices to get mill price. List prices per ft.(*based on approx. $200 per net ton): Butt Weld ⅛ in., 5½¢; ¼ in., 6¢; ⅜ in., 8½¢; ½ in., 11½¢; 1 in., 17¢; 1¼ in., 23¢; 1½ in., 27½¢; 2 in., 37¢; 2½ in., 58½¢; 3 in., 78½¢. Lap Weld 3½ in., 92¢; 4 in., $1.09; 5 in., $1.48; 6 in., $1.92. Add freight, 3% transport tax for destination price. † Production discontinued November 1957

WROUGHT IRON PIPE: List prices per ft. same as for wrought steelpipe, but add following "discounts" to get Pittsburgh mill price: Butt Weld—1 in. black, + 65.54, galv., + 95.77; 1¼ in. black, + 65.54, galv. + 95.23, 1½ in. black, + 61.79 galv. + 91.22; Lap Weld —2½ in. to 3 in. black + 67.95 galv. + 95.77; 4½ in. to 6 in. black + 64.74 galv. + 90.68 Add freight rates plus 3% transportation tax to get destination price.

Modern construction calls for high early strength concrete with COLUMBIA CALCIUM CHLORIDE

What's the outlook for the construction industry? Americans will pay a record-breaking construction bill of more than $50 billion in 1959. By 1975, the figure has been reliably estimated at $137 billion annually. Booming along with the industry, the use of high early strength concrete made possible with Columbia Calcium Chloride plays an increasingly important role in modern concrete construction. During cold weather, this role becomes especially significant. Why?

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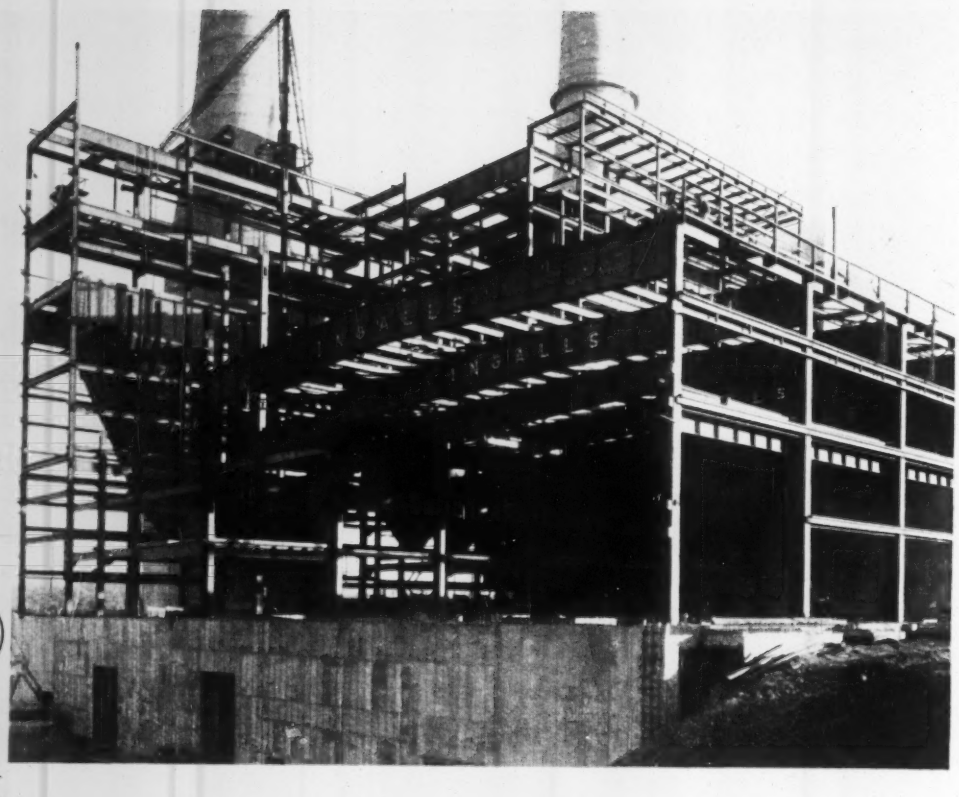

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Bids Asked—Low Bidders—Contracts Awarded—

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 36, N. Y., ELSIE EAVES, Manager
J. A. MAHONEY, M. WETZEL, M. E. SCIORRA, D. TARTAGLIA, MARIE MORAVSIK, ELAINE CHOMYAK, ELIZABETH WERRA, ELEANOR QUERET, Reports, J. H. WEBBER, E. R. HUBER, Statistics.

NEW ENGLAND

HEAVY CONSTRUCTION—BA

† R. I., Davisville—BA 1-21—1st Naval Dist., 495 Summer St., Boston, Mass., sealing and resurf. roads, U. S. Naval Btn. Center, NBy 21950; Spec. 21950-58; $25,000-$100,000. Plans deposit $25. CD 8-11-54 under Public Buildings.

† Rhode Island—UNDERGROUND MISSILE STORAGE STRUCTURES—BA on or about 2-4—U. S. Eng., 187 Westminster St., Providence, modifications to underground missile storage structures, Nike Batteries 38 off Rte. 114, Bristol and Battery 99 off Pound Hill Rd., North Smithfield; Eng-19-016-59-77. CD 6-5-57.

† Mass., Falmouth—ROADS—BA On Or About 2-4—U. S. Eng., 187 Westminster St., Providence, R. I., roads (F.Y. 59), Otis Air Force Base; ENG-19-016-59-75. $75,000-$100,000. Plans deposit $5. CD 3-12.

BUILDINGS—BA

Mass., Westfield—WAREHOUSE—BA 1-19—Stanley Home Products, Inc., 42 Arnold St., selected list of bidders), distribution center-warehouse. $400,000. Caolo Assoc., 1562 Main St., Springfield, Mass., archts. CD 10-27.

Mass., Brookline—LIBRARY, etc.—BA 1-20—Holy Cross Greek Orthodox Theological School, 55 Goddard Ave. (selected list of bidders), library, classroom, gymnasium, $350,000. Samuel Glaser Assoc., 234 Clarendon St., Boston, Mass., archts. CD 3-13.

R. I., Newport—GYMNASIUM—BA 1-22—St. George's School, Middletown, gymnasium north of Denman Hall, $400,000. Robinson, Green & Beretta, John St., Providence, archts. CD 11-11-57.

HEAVY CONSTRUCTION—LB & CA

† Consolidated Constructors Inc., 807 Congress St., Portland, Me.—CA $731,979, est. $900,000; Readiness Crew Bldg., Dow Air Force Base; ENG-19-016-59-41, BANGOR, ME.; U.S. Eng., 424 Trapelo Rd., Waltham, Mass. Bids Dec. 16. CD 12-22, under LB.

▲ R. Zoppo Co., 842 Providence Hy., Norwood, Mass.—LB $1,114,680. F. A. Proj., NH-27(4)005; Cont., H-102-57, sewage treatment plant and interceptor sewers, DOVER, N. H.; Dpt. Pub. Wks., City Hall, Dover, N. H. Bids Dec. 30. CD 12-2.

Abiondi-Boynton Corp., 16 Clark Bldg., Natick, Mass.—LB $82,665, est. $78,011, constr. stone mound, wall, drainage, etc., Lake Whalom, Lunenberg and Leominster, MASSACHUSETTS; Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston, Mass. Bids Dec. 23. CD 12-15.

MASSACHUSETTS—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston, bids opened 12-23.

Charles Contracting Co., Inc., 328 Pleasant St., Watertown, Mass.—LB $95,302, est. $95,555, hy. and bridge constr., Johnson Rd., Winchester. CD 12-17.

† Davison Constr. Co., Inc., 1306A Elm St., Manchester, N. H.—CA $812,000, airmen's service Club and Electronics Shop, Westover Air Force Base; ENG-19-016-59-54, CHICOPEE FALLS, MASS.; U. S. Eng., 424 Trapelo Rd., Waltham, Mass. Bids Dec. 11. CD 12-17, under LB.

▲ L. & R. Constr. Co. of Medford, Inc., 84 Main St., North Reading, Mass.—CA $2,182,685, est. $2,500,000; L-58-2, Contr. 1, hangar and teamsto bldg. at Logan Airport, EAST BOSTON, MASS.; Commonwealth of Mass., Airport Management Bd., Div. Bldg. Constr., 18 Chauncy St., Boston, Mass.; Northeast Airlines Inc., Logan Airport, East Boston, Mass.; Jesse M. Shuman, Glaser & Assoc., 234 Clarendon St., Boston, Mass., archts. Bids Dec. 4. CD 12-8, under LB.

† U. S. Eng., 424 Trapelo Rd., Waltham 54, Mass.—rejected bids Nov. 26, jet engine test stand, Dow Air Force Base, Serial No. ENG-19-016-59-48, $50,000-$100,000. BANGOR, ME. CD 11-17.

MASSACHUSETTS—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston. Bids opened 12-30.

B. & H. Constr. Co., Inc., North Brookfield, Mass.—LB $249,900, est. $303,339, bridge work and reconstr. roads, Brimfield and Holland. CD 12-17.

MASSACHUSETTS—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston.

Suburban Excavators Inc., 4 New Salem St., Wakefield, Mass.—CA $737,668, State Hy. and steel stringer bridge, Rte. 125, F-372-(3), Andover. Bids Dec. 9. CD 12-15, under LB.

R. H. White Constr. Co., 41 Central St., Auburn, Mass.—LB $101,855, est. $100,000, Trunk Sewers, LEXINGTON, MASS.; Bd. Selectmen, Town Hall, Lexington, Mass. Bids Dec. 29. CD 12-24.

BUILDINGS—LB & CA

† Charles Logue Bldg. Co., 71 Needham St., Newton Highlands, Mass.—LB $743,080, est. $750,000, Proj. Mass. 59-C, Federal 5-A-9, ELEMENTARY SCHOOL, Hanscom Air Force Base, Cambridge Research Center, BEDFORD, MASS.; Housing & Home Finance Agency, 346 Broadway, New York, N. Y. Bids Dec. 22. CD 12-12.

Ley Constr. Co., 124 State St., Springfield, Mass.—LB est. $110,000, MANUFACTURING BLDG. addn., 89 Logan St., SPRINGFIELD, MASS.; Standard Electric Time Co., 89 Logan St., Springfield, Mass. Bids Dec. 30. CD 12-24.

MIDDLE ATLANTIC

HEAVY CONSTRUCTION—BA

Pa., Phila.—SPRINKLER SYS.—BA 1-19—Dpt. Procurement, City Hall Annex, Bid 6075, furnishing and installing automatic sprinkler sys., Municipal Pier No. 40, South Delaware River. CD 11-12-52.

N. Y., New York—FLOODLIGHTING—BA 1-23—New York City Transit Auth., 370 Jay St., Brooklyn, Zone 1, Contr. E-187, furnishing, installing floodlighting for IRT Division Yards at E. 180th St., 239th St. and Jerome Ave., Bronx Boro and Livona Ave., Brooklyn Boro. CD 3-14-55.

† Fla., Eglin Air Force Base—G.A.T. BLDG.—BA 1-20—U. S. Eng., P. O. Box 1169, Mobile, Ala., G.A.T. bldg., Site A-20, Eglin Air Force Base Aux. 9; ENG-01-076-59-59B. CD 12-17.

† Va., Norfolk—BA 1-20—Dist. P. Wks. Office, 5th Naval Dist., Room 307, Bldg. N-26, U.S. Naval Base, Norfolk 11, dredging, Naval Base (destroyer-Submarine Pier area), NYB 20482; Spec. 20482-58; $100,000-$250,000. CD 9-8, under public buildings.

† Va., Norfolk—BUILDING ALTERATIONS—BA 1-20—Dist. P. Wks. Office, 5th Naval Dist., Room 307, Bldg. N-26, U.S. Naval Base, Norfolk 11, 6th floor bldg. No. 143 alterations, Naval Supply Center, NBY 20474; Spec. 20474-58; $100,000-$250,000.

PROJECTS COVERED

By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $53,000; other public works $88,000; industrial buildings $110,000; other buildings $400,000. Also Foreign projects of $1,000,000 and more in size of interest to American contractors.

By Regions & Classes of Construction
(In order of Listing)

BIDS ASKED
LOW BIDDERS
CONTRACTS AWARDED

New England	Middle West
Middle Atlantic	West of Mississippi
South	Far West

PROPOSED WORK

Water Supply	Public Buildings
Sewers, Waste Disposal	Mass Housing
Bridges	Commercial Buildings
Streets & Roads	Industrial Buildings
Earthwork, Waterways	Unclassified

In These Stages

PROPOSED WORK: Before and including appointment of engineers or architects.

BIDS ASKED: BA (new announcements only). For full calendar, see also preceding issues.

SOON LETS CONTRACT: SLC

LOW BIDDERS: LB On jobs below $500,000 in value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

CONTRACTS AWARDED: CA Except awards to low bidders previously reported in low bidder stage.

CD dates shown are of Construction Daily Issue in which last previous report was published.

OWNERS, ENGINEERS, ARCHITECTS, CONTRACTORS are invited to report their new jobs for listing in these reports when they meet or exceed the size minimums shown above. Address these news releases to J. A. Mahoney, REPORTS, ENGINEERING NEWS-RECORD, 330 W. 42 St., New York 36, N. Y.

Symbols and Abbreviations Include:

† Federal Government
▲ Project of $1,000,000 or over
ENR Engineering News-Record
CD Construction Daily

For additional reports see Construction Daily.

† Fla., Eglin Air Force Base—LABORATORY—BA 1-22—U. S. Eng., P. O. Box 1169, Mobile, Ala., S. C. laboratory, Data Reduction Bldg., ENG-01-076-59-58B. CD 12-22.

† Va., Williamsburg—RAILROAD TRACKAGE—BA 1-22—Dist. P. Wks. Office, 5th Naval Dist., Room 307, Bldg. N-26, U. S. Naval Base, Norfolk 11, rehabilitation, railroad trackage, Naval Supply Center, (Cheatham Annex), NBY 15313; Spec. 15313-58. $25,000-$100,000.

† Fla., Tampa—GROUND CONTROL FACILITY—BA on or About 2-5—U. S. Eng., P. O. Box 4970, Jacksonville, ground control facility, ADCI MALDIN Air Force Base; ENG-08-123-59-45. CD 9-17.

† La., Shreveport—READINESS CREW BLDG.—BA 2-5—U. S. Eng., P. O. Box 867, Little Rock, Ark., 2 story, 18,000 sq. ft. concrete readiness crew bldg., Barksdale Air Force Base; ENG-03-050-59-31. $500,000-$1,000,000. CD 12-31.

† Ky., Lexington—FIRE SPRINKLERS—BA 2-10—Veterans Admin., Munitions Bldg., Wash., D. C., automatic fire sprinklers, Veterans Admin. Hospital.

† Pa., Lewistown—HARDSTAND PAVEMENT—BA about 3-2—Property & Fiscal Officer for Pa., RD 2, Annville, hardstand pavement, 104th Armed Cavalry, U.S. Rte. 522. Inv. NG-36-137-59-1. Plans deposit $5.

† Pa., Punxsutawney—HARDSTAND PAVEMENT—BA about 3-4—Property & Fiscal Officer for Pa., RD 2, Annville, hardstand pavement, 229th FA Bn., N. Findley St. Inv. NG-36-137-59-2. Plans deposit $5.

† Pa., New Castle—HARDSTAND PAVEMENT—BA about 3-6—Property & Fiscal Officer for Pa., RD 2, Annville, hardstand pavement, 229th FA Bn., Frank and Huron Aves. Inv.-NG-36-137-59-3. Plans deposit $5.

† Pa., Lock Haven—HARDSTAND PAVEMENT—BA about 3-9—Property & Fiscal Officer for Pa., RD 2, Annville, hardstand pavement, 728th Ordnance Bn., RD 1. Inv. NG-36-137-59-4. Plans deposit $5.

† Pa., Lewistown—SECURITY FENCE—BA about 3-16—Property & Fiscal Officer for Pa., RD 2, Annville, security fence, 104th Armed Cavalry, U.S. Rte. 522. Inv. NG-36-137-59-5. Plans deposit $5.

† Pa., Punxsutawney—SECURITY FENCE—BA about 3-18—Property & Fiscal Officer for Pa., RD 2, Annville, security fence, 229th FA Bn., N. Findley St. Inv. NG-36-137-59-6. Plans deposit $5.

† Pa., New Castle—SECURITY FENCE—BA about 3-20—Property & Fiscal Officer for Pa., RD 2, Annville, security fence, 229th FA Bn., Frank and Huron Aves. Inv. NG-36-137-59-7. Plans deposit $5.

† Pa., Lock Haven—SECURITY FENCE—BA about 3-23—Property & Fiscal Officer for Pa., RD 2, Annville, security fence, 728th Ordnance Bn., RD 1. Inv. NG-36-137-59-8. Plans deposit $5.

HEAVY CONSTRUCTION—BA

† Md., Bethesda—DENTAL RESEARCH LABORATORY BLDG.—BA 2-10—General Services Admin., Regional Office Bldg., 7th and D Sts. S.W., Wash. 25, D. C., Dental Research Laboratory Bldg. (except elevators) for National Institutes of Health, ENR adv. 1-15. CD 3-26-57.

D. C., Wash.—HOSPITAL—BA 2-11—Sibley Memorial Hospital, 1140 North Capitol St., Sibley Memorial Hospital and Lucy Webb Hayes School of Nursing, MacArthur Blvd. and Loughboro Rd., N. W., Justement, Flam & Darby, 2011 K St. N. W., archts. CD 9-5.

HEAVY CONSTRUCTION—LB & CA

Anthony Grace & Sons, Inc., 151-45 6th Road, Whitestone, N. Y.—LB $88,705, (4 bidders), (5) repaving with b. conc. upon new or built-up broken stone base in College Point causeway from 124th St. to 126th St. and constr. temporary storm water drain, etc., in College Point causeway west side from 125th St. to 130th St., B-848, Queens Boro, NEW YORK; President Queens Boro; Rm. 228, Boro Hall, 120-55 Queens Blvd., Kew Gardens 24, N. Y. Bids Dec. 18. CD 12-10.

General Electric Co., 570 Lexington Ave., New York, N. Y.—CA $857,640, 13 substations, Niagara Co., NP-23 Niagara Project, NEW YORK; Power Authority of State of New York, The Coliseum Tower, 10 Columbus Circle, New York 19, N. Y. CD 12-22, under LB.

▲ Horn Constr. Co., Inc., 2174 Hewlett Ave., Merrick, N. Y.—CA $1,867,771, Throgs Neck Bridge Contr. No. TN-11, Queens Interchange, NEW YORK; Triborough Bridge & Tunnel Auth., Admin. Bldg., Randall's Island, New York 35, N. Y. Bids Dec. 17. CD 12-19, under LB.

South Shore Dredging Co., Inc., 100 West Avenue, Patchogue, N. Y.—CA $123,108 (2 bidders) dredging for Marina at mouth of Penataquit and Patchogue Creeks at South Clinton Ave., BAY SHORE, N. Y.; Dpt. P. Wks., Bay Shore, N. Y.

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1820-40 Fields Ave., Columbus 16, Ohio
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▲ Melwood Constr. Corp., 507 Fifth Ave., New York, N. Y., CA $2,747,000, reconstr. swing span and approaches of Madison Avenue Bridge over Harlem River between Manhattan and Bronx Boros., NEW YORK, N. Y.; Dpt. P. Wks., Rm. 2200, Municipal Bldg., New York 7, N. Y. Bids Dec. 5. CD 12-15; under LB.

DeFoe Constr. Co., 689 E. 234th St., New York 66, N. Y., LB $178,873, (8 bidders) (4) reconstr. retaining wall along easterly house line of Sheridan Ave. from point about 104 ft. south of E. 156th St. extending southerly therefrom for distance 235 ft., Bronx Boro., NEW YORK, N. Y.; President Bronx Boro., Rm. 207, Bronx County Bldg., 851 Grand Concourse, New York 51, N. Y. Bids Dec. 29. CD 12-19.

NEW JERSEY—State Hy. Dpt., Kenneth D. Rice, secy., 1035 Parkway Ave., Trenton. Bids opened 12-30.

George M. Brewster & Son, Inc., 275 W. Fort Lee Rd., Bogota, N. J., LB $986,619, (8 bidders) grading and paving 1.1 mi. sect. of Rte. 208, Sect. 3, from Goffle Rd. to 1,300 ft. west of Grandview Ave. in Hawthorne and Wyckoff, incl. overpass at Lafayette Ave., Passaic and Bergen Counties. CD 12-11.

NEW JERSEY—State Hy. Dpt., Kenneth D. Rice, secy., 1035 Parkway Ave., Trenton. Bids opened 12-30.

Middlesex Concrete Prod. & Excavating Co., foot of Berry St., Woodbridge, N. J., LB $95,525, (7 bidders) center island closing and constr. of turnarounds on 1.818 mi. section of U. S. Rtes. 1 and 9, Sect. 1, Woodbridge Twp., Middlesex Co. CD 12-11.

State Paving & Constr. Co., 69th and Kingsessing Ave., Phila., Pa., LB $380,154, Bid 3431, paving, PHILA., PA. Dpt. Procurement, City Hall Annex, Phila., Pa. Bids Dec. 22. CD 12-9.

Asphalt Paving & Supply Co., Conshohocken Rd. and Penna. Turnpike, Norristown, Pa., LB $113,148, Bid 3436, paving, (Phila., Pa.).

▲ NEW JERSEY—State Hy. Dpt., Kenneth D. Rice, secy., 1035 Parkway Ave., Trenton.

I. B. Miller Contg. Corp., 18-12 45th St., Long Island City, N. Y., CA $1,585,195, Rte. 78, bridges over Central R.R. of New Jersey and Lehigh Valley R.R., Borough of Bloomsbury, Bethlehem Twp., Hunterdon Co. Bids Dec. 16, awarded Dec. 30. CD 12-18; under LB.

Mal-Bros. Contrg. Co., 3848 Highland Ave., Newark, N. J., LB $237,814, (6 bidders) pavement and drainage north of Bridge 290, 219 and 292, Contr. PN-530-004, PORT NEWARK, N. J.; The Port of New York Auth., office of Chief Engineer, Room 1100, 111 Eighth Ave., New York 11, N. Y. Bids Dec. 23. CD 11-26.

▲ PENNSYLVANIA—Pa. Hy. & Bridge Auth., 50th North Office Bldg., Harrisburg. Bids opened 12-30.

Pa.—Allegheny Contracting Co., 101 Gargrove St., Pittsburgh, Pa., LB $1,685,963, est. $1,500,000, (4 bidders) 13,748 ft. divided by rein.-con. variable in width, 1-beam bridge, appr. 3955 (3-B) Proj. 722.1, Hopewell Twp., Aliquippa and S. Heights Boros., Beaver Co.

Pa.—Gasparini Excavating Co., Inc., 1439 Main St., Peckville, Pa., LB $2,379,239, est. $3,000,000, (5 bidders) 13,304 ft. divided by rein.-c. conc. 24 ft. wide each side earth divisor 60 ft. wide 6 bridges, L.R. 1003, (1-C) FAI, Section Penn-Can Hy. (Proj. 826-3) Scott Twp., Lackawanna Co. CD 12-12.

▲ PENNSYLVANIA—Pa. Hys. Dpt., 50th North Office Bldg., Harrisburg. Bids opened 12-30.

Pa.—Wright Contracting Co., Brookhaven Rd., Columbus, Ga., and Sinclair Lane and Frankford Ave., Oldenton, Md., LB $2,225,659, (5 bidders) 15,425 ft. divided by rein.-con. 24 ft. wide each side 60 ft. median area, 6 bridges, L.R. 799, (1) FAI Maryland line towards Greencastle, Pa., Antrim Twp., Franklin Co.

Pa.—F. D. Kessler, Inc., Northumberland, Pa., LB $1,178,307, (11 bidders) 16,532 ft. grade, drain of separated 4 lane hy. variable in width, 3 bridges, alt. superstructures, L.R. 1009, (1) Clarion and Union Twps., Clarion and Jefferson Counties.

Pa.—John F. Casey Co., P.O. Box 1888, Pittsburgh 30, Pa., LB $2,977,567, (9 bidders) 19,950 ft. rein.-c. conc. variable in width, each side divisor, 3 bridges, T.R. 88, Ambridge and Baden Boros., Harmony Twp., Beaver Co. CD 12-10.

Pa.—Chas. H. Fry Constr. Co., 1902 Cherry St., Erie, Pa., LB $180,848, (3 bidders) 5,254 ft. rein.-con. road 22 ft. wide and 1 alt. type superstructure bridge, Roadway Rte. 2503, (3) Presque Isle State Park, Erie Co. CD 12-15; under Pa. Dpt. Forests & Waters as owners.

John Meehan & Son, 9301 Krewstown Rd., Phila. 15, Pa., CA $397,528, Bid 2174, reconstr. sewer and relay water mains in Pratt St. between a point 27.28 ft. east Duffield St. and Frankford Ave., PHILA., PA. Dpt. Procurement, City Hall Annex, Phila., Pa. Bids Dec. 9. CD 11-25.

Joseph Lombardi & Sons, 1311 S. Broad St., Phila. 47, Pa., CA $168,164, Bid 2175, sewers in Dr. R.W. (former Geary St.) between Darien St. and 10th St. between Packer Ave. and Pattison Ave., (Phila., Pa.).

▲ MARYLAND—State Rds. Comm., 108 E. Lexington St., Baltimore 2. Bids opened 12-30.

Burkholder & Burkholder, Winchester, Va., LB $1,489,523, (6 bidders) grade, drain, surf. 7.351 mi. Rte. 67, Garland to Boonsboro, W-353-2-620, Washington Co. CD 12-15.

▲ MARYLAND—State Rds. Comm., 108 E. Lexington St., Baltimore 2. Bids opened 12-23.

Md.—S. T. Brotemarkle Constr. Co., Inc., Cumberland, Md., LB $1,027,496, (3 bidders) grading, drainage, surf. 2.713 mi. Rte. 36, Carrigaville to Barrelville, A-466-0-616, Allegany Co.

Md.—Richard F. Kline, Inc., Frederick, Md., LB $1,081,271, (5 bidders) grading, drainage, surf. 5.097 mi. Rte. 31, Westminster to Cranberry, CL-342-1-720, Carroll Co.

Md.—H. O. Firor Corp., Towson 4, Md., LB $620,175, (7 bidders) grading, drainage, surf. 2.727 mi. Rte. 261, Chesapeake Beach, westerly, C-207-1-520, Calvert Co. CD 12-10.

MARYLAND—State Rds. Comm., 108 E. Lexington St., Baltimore 2. Bids opened 12-30.

Md.—Eugene Chaney, Upper Marlboro, Md., LB $357,526, (4 bidders) grading, drainage, surf. 3.143 mi. Rte. 234, from Rte. 301 to St. Mary's County Line, southern section, CH-301-2-520, Charles Co.

Md.—Taylor & Keebler, Clinton, Md., LB $302,295, (4 bidders) grading, drainage, relocation and surf. 3.979 mi. Rte. 237, Chaptico to Clements, SM-339-1-520, St. Mary's Co. CD 12-15.

▲ McLean Constr. Co., Fidelity Bldg., Baltimore 1, Md., CA $1,280,298, reconstr. Maryland Ave. Bridge, section of Jones Falls Expressway, BALTIMORE, MD. City Bureau of Hys., 303 Municipal Bldg., Baltimore 2, Md. Bids Dec. 17. CD 12-19; under LB.

BUILDINGS—LB & CA

Mars Assocs. & Normel Constr. Corp., 271 Church St., New York 13, N. Y., CA $927,000, general constr., PUBLIC SCHOOL 213, Linden Blvd. and New Jersey Ave., BROOKLYN, N. Y.; Supt. School Bldgs., Bureau Constr., 42-15 Crescent St., Long Island City 1, N. Y. Bids Dec. 17. CD 12-19; under LB.

▲ Siegfried Constr. Co., Inc., 6 N. Pearl St., Buffalo, N. Y., CA $3,391,850, general constr. eight 1 story ACADEMIC BLDGS., Phase 2 for Erie County Technical Institute, BUFFALO, N. Y.; Bd. Supervs. Erie Co., County Hall, Buffalo, N. Y. Bids Dec. 2. CD 12-4; under LB.

Dobkin Electrical Co., 6 Stetson, Buffalo, N. Y., CA $631,900, electrical work for Erie County Technical Institute, (Buffalo, N. Y.).

▲ Edward Corning Co., 302 Bedford St., Stamford, Conn., CA $1,493,000, 2 story HOSPITAL addn., MOUNT KISCO, N. Y.; Northern Westchester Hospital, E. Main St., Mount Kisco, N. Y. Bids Nov. 25. CD 12-15; under LB.

▲ Planet Constr. Corp., 11 W. 42 St., New York 36, N. Y., CA $1,234,000, general constr., plumbing, heating and ventilating work, electrical work and lighting fixtures 8th Ave. GARAGE, 8th Ave., W. 54 to 34 Sts., Manhattan Boro., NEW YORK, N. Y.; Dpt. P. Wks., Rm. 2200 Municipal Bldg., New York 7, N. Y. Bids Nov. 15. CD 11-14; under LB.

▲ M. Melnick & Co., Inc., and Julius Melnick, 226 Willow Ave., New York 54, N. Y., CA $1,365,102, Contr. C-129-1, Fresh Pond BUS GARAGE, 66-99 Fresh Pond Rd., RIDGEWOOD, N. Y.; New York City Transit Auth., 370 Jay St., Brooklyn 1, N. Y. Bids Dec. 5. CD 12-19; under LB.

▲ Public Service Electric & Gas Co., 80 Park Place, Newark, N. J., Own Forces, $8,000,000, Newark SWITCHING STATION, Plane and Willow Sts., NEWARK, N. J. CD 4-16-57.
Westinghouse Electric Corp., Sharon, Pa., CA 3 transformers, Newark, N. J.?

Larsen & Olsen, 45 Central Ave., Hackensack, N. J., LB $580,000, est. $915,000, general contract SCHOOL addn., WOOD RIDGE, N. J.; Bd. Educ., 12th St., Wood Ridge, N. J. Bids Dec. 22. CD 11-28.

Shattuck & Crane, Broomall, Pa., Separate Contracts, $570,000, 24 RESIDENTIAL DEVELOPMENT, Bryn Mawr Ave., etc., NEWTOWN SQUARE, PA.

McCoy Bros., Mount Holly Springs, Pa., LB $496,752, general constr., COUNTY NURSING HOME bids, CARLISLE, PA.; Cumberland Co., Commrs., Courthouse, Carlisle, Pa. Bids Dec. 23. CD 11-15-57.

Helwig Bros., Glenside, Pa., LB approx. $110,000, BAKERY, ERDENHEIM, PA.; Hassis Bakery, 5825 Henry Ave., Phila., Pa.; Francis Cauffman, Wilkins & Pepper, 204 W. Rittenhouse Square, Phila., Pa., archts. CD 8-29; under Pa., Flourtown.

▲ Nason & Cullen Inc., 6522 Vine St., Phila., Pa., CA $2,500,000, WAREHOUSE and office paving and railroad siding, KING OF PRUSSIA, PA.; General Electric Co., 1 River Rd., Schenectady, N. Y.; George Ewing Co., Western Savings Fund Bldg., Phila., Pa., archt.-engr. CD 8-26-57.

Summit Contrg. Corp., c/o John Ryan, Transportation Center Bldg., Phila., Pa., Separate Contracts, $750,000, RESIDENTIAL DEVELOPMENT, School House Lane, PHILA., PA.

▲ Moreland Constr. Co., 100 W. Packland St., Phila., Pa., Separate Contracts, $5,000,000, RESIDENTIAL DEVELOPMENT, Old Arch St. Rd., etc., PLYMOUTH MEETING, PA.

▲ Kirby & McGuire, Inc., 2518 Greenmount Ave., Baltimore 18, Md., LB $2,239,239, (15 bidders) brick, concrete, steel, block Ridgely JUNIOR HIGH SCHOOL, north of Hebb, TOWSON, MD.; Baltimore Co. Bd. Educ., Aigburth Rd., Towson 4, Md. Bids Dec. 23. CD 12-2.

Wm. H. Sands, 704 York Rd., Towson 4, Md., LB $770,800, (10 bidders) 1 story brick, concrete, steel, brick built-up roofing Scott's Branch ELEMENTARY SCHOOL, Marriotts Rd., north of Liberty Rd., northwest of Baltimore, TOWSON, MD.; Baltimore Co. Bd. Educ., Aigburth Rd., Towson 4, Md. Bids Dec. 30. CD 12-15.

▲ J. Roland Dashiell & Sons, 447 S. Salisbury Blvd., Salisbury, Md., CA $1,411,153, BOARD OF HEALTH office, DOVER, DEL.; Delaware State Bd. of Health, Dover, Del.; Pope & Kruse, 1116 West St., Wilmington, Del., archts. Bids Dec. 16. CD 12-18; under LB.

† Coe Constr. Co., 1018 Vermont Ave., N. W., Wash., D. C., CA $515,000, mens DORMITORY, Gallaudet College, WASH., D. C.; General Services Admin., 18 and F Sts., N. E., Wash., D. C. Bids Nov. 26. CD 12-3; under LB.

Harvey Constr. Co., 1416 Randolph Rd., Silver Spring, Md., LB $470,000, (9 bidders), WAREHOUSE (office, New York Ave., near South Dakota Ave., N. E. (parallel to Pennsylvania R. R.), WASH., D. C.; John Gibson, c/o Vosbeck & Ward, archts., 610 Madison St., Alexandria, Va. Bids Dec. 23. CD 12-10.

SOUTH

HEAVY CONSTRUCTION—BA

† N. C., Cherry Point—AIR STATION IMPROVEMENTS—BA 1-27—Distr. P. Wks. Office, Fifth Naval Distr. Bldg. N-26, U. S. Naval Base, Norfolk, Va., replacing heating facilities, Marine Corps Air Station, NBy 20329. Spec. 20319-58. $25,000-$100,000. CD 9-8.

N. C., Norwood—BA 1-29—Town (Town Hall), 250,000 gpd sewage treatment plant, pumping station, Div. 1, 29,450 lin. ft. sewer mains, etc., Div. 2. Plans deposit $15 each div. The Harwood Beebe, Co., 2000 E. Main Extens., Spartanburg, S. C., engr.

N. C., Raleigh—BA 1-30—City, City Hall, sewer improvs., incl. 14,080 lin. ft. 30-42 in. concrete pipe, 12,000 lin. ft. 10-24 in. concrete terra cotta pipe. Plans deposit $25. John A. Edwards, 709 W. Johnston St., consult. engr. CD 10-14.

▲† Kentucky and Indiana—BA About 3-2—U. S. Eng., P. O. Box 59, Louisville, Ky., widen existing canal, guide wall and misc. structures involving 2,760,000 cu. yd. common excav., 222,000 cu. yd. rock excav., dredging 1,640,000 cu. yd., 45,700 sq. ft. sheet steel piling, etc., Louisville Rocks and Dam, Ohio River, Inv. No. CIVENG-15-029-59-43. CD 9-5.

BUILDINGS—BA

Va., Fairfax—SCHOOL—BA 1-20—Fairfax Co. Bd. Educ., Fairfax, constr. Bristow Elementary School, Annandale. Plans deposit $35. Pickett & Seiss, 110 Gordon Rd., Falls Church, archts. CD 10-7.

† Ala., Fort Rucker—BARRACKS—BA 1-22—U. S. Eng., P. O. Box 1169, Mobile, constr. Barracks with mess. ENG-01-076-59-57B. CD 9-5.

† S. C., Orangeburg—ARMY RESERVE TRAINING CENTER—BA 1-22—U. S. Eng., Box 905, Charleston, army reserve training center. ENG-38-081-59-09B. CD 12-17.

Ala., Scottsboro—HOUSING—BA 1-28—Housing Auth., City, City Hall, 23 houses, maintenance, administration bldgs. $460,000. Plans deposit $40. Northington, Smith & Kranert, 1949 Florence Blvd., Florence, archts. CD 5-6-52.

N. C., Gastonia—Y.M.C.A.—BA 2-3—Young Men's Christian Assn., Gastonia, Y.M.C.A. bldg. Plans deposit $50. Ronald Greene, Gastonia, archt.

La., Chalmette—SCHOOL—BA 2-4—St. Bernard Parish School Bd., Court House Bldg., 1 story, 35,000 sq. ft., steel frame, brick, concrete block, Carolyn Park Elementary School. Plans deposit $50. Burk, LeBreton & Lamantia, 632 Pirates Alley, New Orleans, La., archts. CD 12-16; under LB.

▲ Tenn., Chattanooga—HEALTH CENTER—BA 3-2—City and Hamilton County, health center, $1,029,000. Bianculli & Palm, 510 Volunteer State Life Bldg., 50 Cherry St., archts. CD 11-13.

HEAVY CONSTRUCTION—LB & CA

VIRGINIA—Commonwealth of Va., Dist. Hwy., 1221 E. Broad St., Richmond.

R. G. Pope Constr. Co., Inc., Box 269, Bristol, Va., CA $817,703, 2.479 mi., 2-24 ft. x 7.4 in. bit. concrete base, bit. top beginning 3.729 mi. E. Tenn.-State Line, 4.972 mi. E. Tenn., S.L. and ending 0.343 mi. S. NCL City Bristol, Int. Spurgeon Lane, 0.893 mi. NCL Bristol, Rte. 81, 407, State Proj. 0081-045-037, 0407-095-004, 0407-10-2-071-071B-1, Fed. Proj. I-81-1(15), I-A81-1(25), I-281-1(23), U-103-1(1), Washington Co. and City of Bristol. Bids Dec. 17. CD 12-24; under LB.

▲ WEST VIRGINIA—State Road Comm., Charleston. Bids opened 12-30.

W. Va.—Andersons, Inc., Box 3004, Charleston, W. Va., LB $631,934, grading, draining, concrete base w.dn., traf. bd. stone base and b. conc. surf., 1.244 mi., Arlington Blvd., 24th St. overhead, Proj. F-187-2(1), Cabell Co., LB $224,514, crusher run base course and surf. treatment, 2.486 mi., Ashton-Buland Road, in Sec. Rte. 41, Proj. S-618-2, Mason Co.

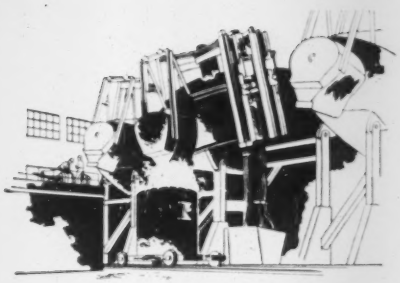
W. Va.—Terra Alta Limestone Co., Terra Alta, W. Va., LB $321,090, traf. bd. base and b. conc. surf., 5.844 mi. Forks of Cacapon-Virginia State Line Rd. (in W. Va. Rte. 45, Proj. S-244(3), Hampshire Co.

W. Va.—Bennie Snyder, Box 816, White Sulphur Springs, W. Va., LB $1,626,226, grading and draining 2.435 mi. Interstate Rte. 77 from 0.5 mi. N.E. of Kenna Interchange to 4.5 mi. S.E. of Ripley, Proj. I-77-3(13)125, Jackson Co.

W. Va.—Frederick Engineering Co. and Robertson-Henry Co., P.O. Box 2078, Huntington, W. Va., LB $2,649,765, grading, draining and structures 4.284 mi. Interstate Rte. 77, Proj. I-77-3(14)128 and I-77-3(15)130, Jackson Co.

W. Va.—Haynes Constr. Co., Box 1497, Bluefield, W. Va., LB $2,653,034, grading, draining and structures 2.66 mi. Interstate Rte. 77, Proj. I-77-3(9)124, Jackson Co.

W. Va.—Harrison Constr. Co., and Kuhn Constr. Co., Box 1101, Western Ave., Pittsburgh, Pa., and Kanawha



Back Yard Steel

by R. G. LeTOURNEAU

If you buy materials for manufacturing and have problems on quality, deliveries and price, like us you'll probably either wind up in a jam or in "doing it yourself."

That's how we came to make steel in our "backyard."

As you may know, steel is most commonly made in either the so-called open-hearth furnace or the electric furnace. It is generally conceded that better control of the analysis and quality of steel of offered by the electric furnace than by the open hearth, which incidentally is used to make by far the majority of the world's steel. Since quality is one thing we insist on, we built three 25-ton electric furnaces for our steel.

To this we added a plate rolling mill. As far as we know, we have the first all welded man-size rolling mill stand. It's a four-high mill with work rolls 38" x 154" and back up rolls 54" x 154", fully roller-bearing equipped.

Another feature that is absolutely novel, as far as we know, is that there are no universal joints with driveshafts and pinions between the drive motors and work rolls. Each roll is driven by two geared motors fastened right onto each end of the roll bearing block, so the conventional, troublesome toggle joints are done away with. These motors are one tenth the size normally required because they can run ten times as fast, being geared; they also are long and narrow — smaller than the rolls themselves so they do not prevent the rolls coming together. They are LeTourneau-built DC motors just like the ones in our Electric Wheels, only bigger. The gear reduction is also just like the gear reduction in our Electric Wheels, only heavier. These four motors can put out better than a thousand horsepower each.

Power for furnace tilting, screwdowns, rollout tables, manipulators, etc., is provided by the same LeTourneau-built, high-torque AC motors that are used to control our commercial logging winches, the lifting of our eight-million-pound offshore drilling platforms, steering our mobile equipment, and so on.

Not only do we have quality steel produced by our electric furnaces, but we have our steel fabricating shop adjoining the steel rolling mill. Many times a high-alloy steel plate, which must be cut hot, is on the oxyacetylene cutting table being cut for fabricating, forging or both before it has been allowed to cool down.

Then, too, we have very little waste. You might say almost none. All the scrap goes back into the furnace to make more steel, so it's kind of a never-ending process. In fact, our steel is made from a higher proportion of steel scrap than pig iron so we get real quality and real economy, too. We have enough capacity to offer this steel plate for sale, so if you need some just let us know.

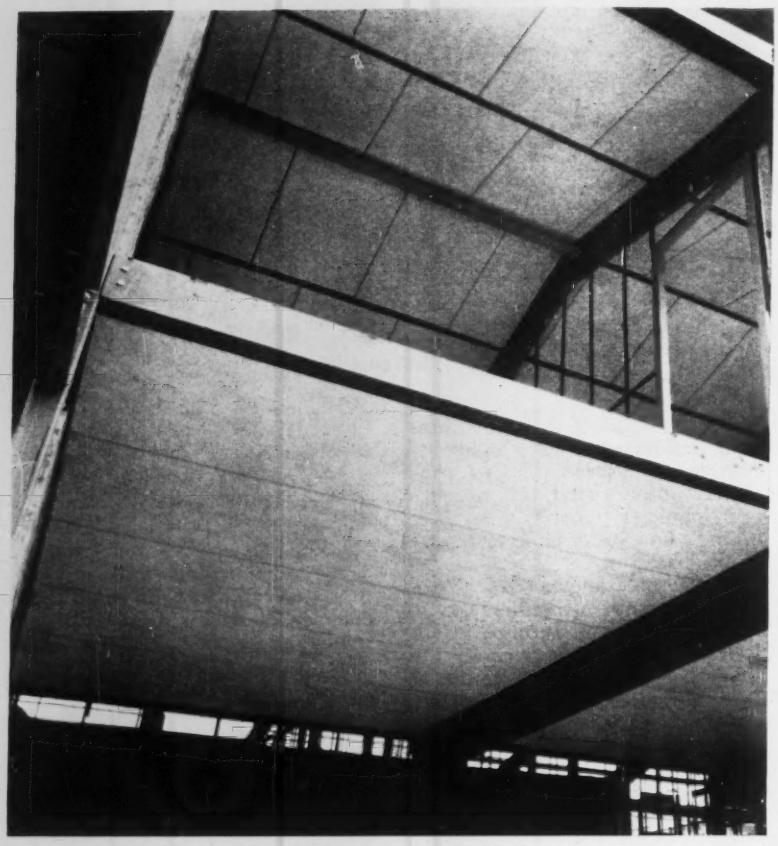
Our steel mill is one result of the kind of practical research we do to insure a better end product. For our big job is the design and production of some of the world's biggest machines, most of them mobile, to do the world's heaviest work. You'll find our equipment at work in logging, heavy lifting, offshore oil drilling, land clearing, and pretty soon in earthmoving again. If you've got a big job that needs a big solution, why not call on us?

R.G. LeTourneau

R.G. LETOURNEAU INC

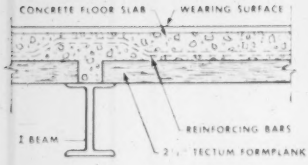
2721 SOUTH MAC ARTHUR
LONGVIEW, TEXAS

R-112



Two uses for versatile Tectum are shown in the new Reed College Men's Dormitory. The roof deck is Tectum tile. The ceiling material of the first floor is the new Tectum formplank. Architects: Shell, Hoyt and Farnham. Contractor: Juhr & Sons, Portland, Oregon.

Cross section of Tectum used as formplank for reinforced concrete slab. →



"In-Place" Tectum Formplank Doubles as Acoustical Ceiling

Tongue and groove Tectum formplank is 9' long and 2½" thick and is shored during the pouring of the concrete slab. After the concrete cures, the shoring is removed and the Tectum remains as a beautifully textured acoustical ceiling. Consider these advantages: Structural Tectum allows economical shoring; Tectum is available in any length needed, saves cutting; forms are handled only once; Tectum formplank eliminates grinding and finishing work on concrete ceilings; saves on acoustical ceiling material where specified; Tectum insulates, is noncombustible, may be painted if desired; beveled edges on the long dimension make neat, solid joints.

For complete information write Tectum Corporation, Newark, Ohio. Plants in Newark, Ohio and Arkadelphia, Arkansas. Branch offices in Philadelphia, Atlanta, Columbus, Chicago, Dallas, Beverly Hills, Seattle and Toronto, Canada. Distributors in all principal cities.

Tectum® QUALITY • INTEGRITY SERVICE 9-19

Valley Bldg., Charleston 1, W. Va., LB $1,869,774, grading, draining and structures 1.231 mi. Interstate Hy. 77, Proj. I-77-3(8)120, Jackson Co.

W. Va.—**Paul Price**, 107 Harrison Court, Huntington, W. Va., LB $259,067, grading, draining traf. bd. base course, b. conc. bottom and wearing courses, cement concrete paving and bridges 0.681 mi. W. Va. Rte. 92, Medical Center Road on Sec. Rte. 59, Proj. 9058, Monongalia Co.

W. Va.—**Harman Bros.**, Box 475, Grafton, W. Va., LB $741,332, grading, draining traf. bd. base, b. conc. bottom and wearing course 2.854 mi. Rosemar Rd. on Sec. Rte. 4/9, 4 and 10, Proj. U.S. S.671(1), Wood Co.

W. Va.—**C. E. Wetherall Co.**, Box 1397, Huntington, W. Va., LB $499,874, grading, draining, traf. bd. base course b. conc. bottom and wearing courses, cement con. paving and bridge 1.316 mi. Spencer-Reedyville Rd. on U.S. Rte. 33, Proj. F.139(10), Roane Co. CD 12/16.

WEST VIRGINIA—State Road Comm., 1800 Washington St. E., Charleston. Bids opened 12/30; **Mountain State Constr. Co.**, Box 296, Spring Hill, W. Va., LB $329,661, Mud River Bridge No. 2104 over Mud River, near Barboursville on Interstate Rte. 64, Proj. I-64-1(11) 18, Cabell Co. CD 12/22.

▲ † **Security Constr. Co.**, 702 West Drive Ave., Richmond, Va., LB $1,496,300 (9 bidders) rehabilitation Wherry Housing, NBY 20368, Spec. 20358/58, Marine Corps Air Station, CHERRY POINT, N. C. Dist. P. Wks. Office, Fifth Naval Distr., Rm. 307, Bldg. N-26, U. S. Naval Base, Norfolk, Va. Bids Dec. 30. CD 12/10.

Jekyll Island State Park Auth., 12th Judicial Bldg., Atlanta, Ga., rejected bids Dec. 2, RECREATION bldgs., GEORGIA. CD 12/12, under LB.

S. J. Curry & Co., Box 1436, Albany, Ga., LB $335,479, READINESS CREW bldg., Turner Air Force Base, 09-133-59-22, ALBANY, GA. U. S. Eng., 200 East St., Julian St., Savannah, Ga. Bids Dec. 9. CD 11/6.

▲ FLORIDA—State Rd. Dpt., Tallahassee.
C. T. Stockton, Inc., Box 1235, Hialeah, Fla., CA $2,289,691 limerock base, b. conc. surf. course with binder course four dual bridges concrete slab deck on prestressed concrete beams on concrete piers founded on concrete piling across 58 and 74 Sts., 1.928 mi. State Proj. Job No. 87260-3101 Palmetto Rd., Dade Co., Bids Dec. 16. CD 12/19 under LB.

† **Florida Builders Inc.**, 43 St. So. St. Petersburg, Fla., LB $248,777 est. $329,220 Commissary STORE, Air Force Missile Test Center, Patrick Air Force Base, ENG-08-123-59-27, COCOA, FLA., U. S. Eng., Box 4970, Jacksonville, Fla. Bids Dec. 23. CD 12/1.

John Burgstiner Constr. Co., Box 224, Sarasota, Fla., LB $213,960 (6 bidders) sanitary sewer, BRADENTON, FLA., City, City Hall, Bradenton, Fla. CD 12/16.

▲ **Sullivan, Long & Hagerty**, 801 5 Ave., N. Birmingham, Ala., LB $1,328,704 sanitary and storm sewers, water system enlargement, SARASOTA, FLA., City Commrs., City Hall, Sarasota, Fla. Bids Dec. 16. CD 12/3, under Water and Sewers.

Henley & Beckwith Inc., 2423 University Station, Gainesville, Fla., LB $656,700 base bid A, $654,700 base bid B, Central HEATING and REFRIGERATION plant and underground distr. sys., University South Florida Proj. 603-1-C, TAMPA, FLA., Florida State Bd. of Control Co., Courthouse, 2 Floor, Tampa, Fla., Bids Dec. 23. CD 12/8.

Doyle Electric Co., 2301 No. Dale Mabry Hy., Tampa, Fla., LB $231,700 base bid A, $247,000 base bid B, ELECTRICAL SYS., Campus utilities University of South Florida, Proj. 603-1-E, TAMPA, FLA., Florida State Bd. of Control, 2 Floor Co. Courthouse, Tampa, Fla., Bids Dec. 23. CD 12/8.

Jones-Mahoney Corp., 1715 Jennie St., Tampa, Fla., LB $138,941 base bids 1, $138,941 base bid 2, HEATING and AIR CONDITIONING, Equipment Bldg., Campus Utilities University of South Florida, Proj. 603-1-A, Tampa, Fla.

Greelish & Co. Inc., Riverside Ave., Jacksonville, Fla., LB $144,140 water sys. and sewage collection sys., University of South Florida, Proj. 603-1-D, TAMPA, FLA., Florida State Bd. Control Co., Courthouse, Tampa, Fla., Bids Dec. 23. CD 12/9.

Cone Bros. Co., 309 Caesar St., Tampa, Fla., LB $329,468, pavement improvs. on MacDill Ave., TAMPA, FLA., City, City Hall, Tampa, Fla. CD 5/9/52.

▲ **Mason Constr. Co. Inc.**, 2600 Far Hills Ave., Dayton 9, O., CA $1,837,947, Nolin Reservoir 30 mi. north of Bowling Green, ENG 15-029-59-29, KENTUCKY. U. S. Eng., P. O. Box 59, Louisville, Ky. Bids Dec. 18. CD 12/24, under LB.

▲ KENTUCKY—Commonwealth of Ky., Dpt. Hys., Frankfort, Ky.—**Ruby Constr. Co.** and **Ruby Mining Co.**, Madisonville, Ky., CA $814,572, grade, drain and surf. 1.515 mi. Louisville-Lexington Interstate, I-64-2 (7) 29, SP. 106-806, CA $1,386,061, grade, drain, surf. 1.9 mi. Louisville-Lexington Rd. incl. 3 structures, I 64-3 (3) 31, SP. 106-806, both in Shelby Co.

Ky.—**Oman Constr. Co. Inc.**, P. O. Box 146, Nashville 2, Tenn., CA $2,297,627, high type surf. 5.258 mi. Barboursville-Corbin Rd. incl. 3 structures, F. 61 (6) SP. 61-10, Knox Co. Bids Dec. 19. Grand total $3,498,260. CD 12/29, under LB.

Dave L. Brown Ready-Mix Concrete Co., 1800 Central Ave., Chattanooga, Tenn. CA $169,000, paving, landing strip, Cleveland Airport, CLEVELAND, TENN. City, City Hall, Cleveland, Tenn. CD 1/4/57.

Pierce Ditching Co., Rte. 4, Kingsport, Tenn. LB $206,130, ww imprvs, proj. 1, CLINTON, TENN. North Anderson Utility Dist., Clinton, Tenn. Bids Dec. 22. CD 12/16.

Tipton Constr. Co., P. O. Box 294, Bristol, Tenn. LB $228,559, proj. 2 ww imprvs. (Clinton, Tenn.)

C. F. W. Constr. Co., Fayetteville, Tenn. LB $164,000, proj. 3 ww imprvs. (Clinton, Tenn.)

▲ ALABAMA—State Hy. Director, State Hy. Dpt., Montgomery. Bids Dec. 30.

Ala.—A. E. Burgess Co. Inc., 3700 10 Ave., N. Birmingham, Ala., LB $912,075, base and conc. pavement, 3.121 mi. from Reids Gap to near Blount-Cullman Co. line on Inter. 65 Blount Co., LB $1,659,264 base and pavement, 6.715 mi. from Mulberry Fork, Warrior, R. N. toward Cullman on Inter. 65, Cullman Co.

Ala.—Couch Constr. Co., Box 859, Dothan, Ala., LB $1,418,052, base and pavement, 12.601 mi. from S. Auburn to E. Opelika on Inter. Rt. 85, Lee Co.

Ala.—Burgreen Constr. Co., Athens, Ala., LB $1,276,906, grading, draining, 6.545 mi. from N. Hammondville NE to Georgia Line on Inter. RT. 59, Dekalb Co.

Ala.—Ralph Rogers & Co. Inc., S. Adams St., Box 67, Bloomington, Ind., LB $737,718, grading, draining and paving, 7.215 mi., base and pavement, 5.416 mi., on Tuscumbia By-Pass, Colbert Co. CD 12/15.

▲ ALABAMA—State Hy. Director, State Hy. Dpt., Montgomery. Bids opened Dec. 30.

Ala.—Laidlaw Constr. Co., LB $148,784, Wolf Ridge Rd., Mobile, Ala., bridge over Wet Weather Creek and 247 lin. ft. grade separation bridge on Inter. Rt. 65, Escambia Co.

Ala.—Cox Constr. Co., 611 N. Maryland, Montgomery, Ala., LB $139,980, 0.038 mi. bridges, from Barnett's Cross Roads NE on Inter. 10&5 and 264 lin. ft. grading, separation structures, Conecuh-Escambia Co., CD 12/15.

W. L. Gates, Jr. Contractor, 189 Sunflower Ave., Clarksdale, Miss., LB $118,000, sanitary sewers, MARKS, MISS. City, City Hall, Marks, Miss. Bids Dec. 2.

Newsom Bros. Contractors, Columbia, Miss., LB $174,726, bridge over Sandy Creek, Liberty Road about 13.7 mi. southeast of here, NATCHEZ, MISS. Bd. Supervs., Adams Co., Court House, Natchez, Miss. Bids Dec. 2.

▲ Taylor-Wheless Co., Hattiesburg, Miss. LB (A) $356,741 (B) $359,973, sewage disposal works, ROLLING FORK, MISS. City, City Hall, Rolling Fork, Miss. Bids Dec. 2. CD 8/13/46.

Delta Constr. Co., Jackson, Miss., LB $375,020 (C) sewage disposal works (Rolling Fork, Miss.).

BUILDINGS—LB & CA

English Constr. Co., Alta Vista, Va., CA $1,471,900, (10 bidders) constr. TREATMENT bldgs., K2-E and K2-D, and RECOVERY bldg., C2, at Western State Hospital, STAUNTON, VA. Western State Hospital, Staunton, Va. Bids Dec. 10.

Grifton Builders, Inc., Grifton, N. C., CA $1,267,000, MARRIED STUDENTS HOUSING, CHAPEL HILL, N. C. University of North Carolina, Chapel Hill, N. C. CD 12/4, under LB.

▲ Breakwater Housing Corp., 1750 E. Sunrise Blvd., Fort Lauderdale, Fla., owner builds, $2,600,000, 16-story, 228 x 214' CB-S and RIC L shaped APARTMENT, FORT LAUDERDALE, FLA. C. L. McKirahan, 2400 E. Oakland Park Blvd., Fort Lauderdale, Fla., archt.-engr. E. D. Britt Assocs., 309 SE 9 Ave., Fort Lauderdale, Fla., engrs.

▲ Rosedown Constr. Co. Corp., 1693 NE 123 St., N. Miami, Fla., owner builds, $1,250,000, 209 RESIDENCES Blvd. Hts. Section 4, WEST HOLLYWOOD, FLA.

R. A. Jensen, 602 St. Francis, Mobile, Ala., LB $406,000, Proj. DC 84-23e, alterations, U. S. Public Health Service Hospital, CARVILLE, LA. General Services Admin., 18 and F Sts., N.W., Wash. 25, D. C. Bids Dec. 23. CD 12/2.

Perrilliat-Rickey Co., Box 13128, New Orleans, La., A $692,859, 3 story, 45,000 sq. ft. rein.-concrete brick and terracotta ADMINISTRATION CLASSROOM BLDG. for Southern University, NEW ORLEANS, LA. state Bd. Educ., State Capitol, Baton Rouge, La. Bids Dec. 4. CD 12/31, under LB.

MIDDLE WEST

HEAVY CONSTRUCTION—BA

† Illinois—MISSILE STORAGE—BA 1.20—U. S. Eng., 475 Merchandise Mart, Chicago 54, Ill.: AAA Site C-41 (a) conversion of two existing type C underground missile storage structures, (b) related site work, concrete pads, aprons, paving, drainage, fencing, ENG-11-032-59-35, Chicago. $450,000. CD 12/24.

Wis., Milwaukee—BA 1.21—Sewerage Comm. of City of Milwaukee, Jones Island, structural steel, dryers, stokers, furnaces, incinerator, incinerator bldg. $490,000. Plans deposit $30. Raymond D. Leary, ch. engr. CD 1/6/58.

Ill., Rockford—BA 1.22—Sanitary Dist. of Rockford, Bd. Trustees, 3300 Kishwaukee St., trunk sewer extens. in Quadrant No. 2 of district.

† Ind., Peru—AIR BASE IMPRVS.—BA 1.22—Dist. Pr. Wks. Office, Bldg. 1-A, Great Lakes 11, sewage treatment plant addn., Bunker Hill A.F. Force Base, Spec. No. 14R4-58, $25,000-$100,000. CD 9/9.

New Tectum Formplank for Tampico Motel

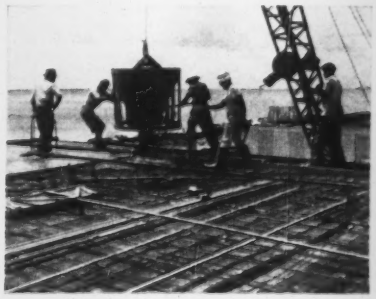
These sequence photos show how Tectum formplank provides a form, a finished ceiling, an acoustical system, and an insulating material—all in one installation, with one material cost. *Here's how:*

1. Clean, white, textured Tectum is laid over shoring between concrete block partitions. Note tongue and groove edges on the long dimension. Tight joints are assured. Special clips are used at each joint.

2. Forming timbers are economically spaced and supported by standard scaffolding and leveled with hydraulic jacks. This section is ready for the pouring operation.

3 Electrical conduit is next installed. Openings are formed with lumber or sleeves. Galvanized clips are evenly spaced along each formboard for firm support at each joint.

4. Reinforcing steel is next installed. Concrete has been poured in the area at the extreme top of the photo. Structural Tectum supports live and dead loads and is safe for workers, equipment and slab loading.



5. Both the second floor slab and the roof slab are poured in much the same manner. This is the Tampico Motel, Rocky Point, Tampa, Florida. Architect: Carlos B. Schoeppl, Miami. Contractor: Farnsworth and Chambers, Tampa.

For further information on Tectum formboard applications write *Tectum Corporation, Newark, Ohio.* Plants in Newark and Arkadelphia, Arkansas. Branch offices or distributors in all principal areas.

Tectum®

QUALITY · INTEGRITY · SERVICE

† Illinois—BA About 1/28—U. S. Eng., 420 Locust St., St. Louis 2, Mo., levee imprvs., Wood River Drainage and Levee Dist., Proj. I-R Madison Co., involving 188,000 cu. yd. levee embankments, 85,000 sq. yd. stripping sod, 17,000 sq. yd. crushed stone road surf. etc., on west bank Wood River near East Alton. CIVENG-23-065-59-35. CD 11/10.

Wis., Fond du Lac—BA 1/28—City, City Hall, 1 story, 20 x 30 ft. chlorination bldg. $60,000. Plans deposit $15. John A. Strand, 2020 University Ave., Madison, engr. CD 1/2.

† Ind., Peru—HEATING PLANT—BA 1/29—Dist. P. Wks. Office, Bldg. 1-A, Great Lakes, Ill., 1 story, about 22 x 56 ft. boiler room addn. to heating plant, water treatment sys. imprvs., Bunker Hill Air Force Base, Spec. No. 14833-58, $250,000-$500,000. CD 9/9.

▲† Ohio & Kentucky—BA 2/5—U. S. Eng., 237 4th Ave., Huntington, Zone 18, W. Va., locks, operations, bldgs. and guard walls, New Richmond Locks and Dam Proj., Ohio River, near Chilo, O. CIVENG-46-022-59-42. Extended date. CD 12/11.

BUILDINGS—BA

▲ O., Cincinnati—HOSPITAL—BA 1/21—Holmes Hospital, Eden and Bethesda Aves., 2 story, brick, gein.-con., 42 bed hospital addn. $1,100,000. Plans deposit $75. Sam Hannaford & Sons, Dixie Terminal, archt. Beineke & Ruehlman, 626 Broadway, engr. CD 2/14/57.

▲ O., Parma—HOSPITAL—BA 2/4—Parma Community Hospital, 7441 W. Ridgewood Dr., Zone 29, hospital, $5,000,000. Plans deposit $50. Geo. S. Voinovich, 1922 f. 107th St., Cleveland 6, O., archt. CD 6/6/57.

BUILDINGS—SLC

▲ Ill., Chicago—DIAL EXCHANGE—Illinois Bell Telephone Co., 212 W. Washington Blvd., Chicago, soon lets contract 4 story, brick, Lawndale dial exchange, under, near Drake and St. Louis Aves., $1,000,000. Holabird, Root & Burgee, 180 N. Wabash Ave., archt. CD 10/4.

HEAVY CONSTRUCTION—LB & CA

▲ OHIO—State Hy. Dpt., Columbus, Zone 15.

O., The Red Eagle Corp., 4470 Indianola Ave., Columbus, O., CA $1,643,508, est. $1,805,800, b. conc. paving on waterproofed aggreg. base and bridge 5.047 mi. Sections BUT 127-18.95 PRI 127-0.00 US Rte. 127 Milford Twp., Butler Co.; Somers Twp. in Preble Co.; F-504(9) Proj. 654, Butler and Preble Counties.

O., C. F. Replogle Co., Box 308, Circleville, O., CA $2,763,239, est. $3,632,000, C. conc. paving and bridge, 2.448 mi. Section LAW-52-5.99 State Rte. 75 and US Rte. 52 in City of Ironton and Hamilton and Upper Twps. U-FEG-493(6), U-F-421(8) Proj. 655, Lawrence Co.

O., Harley E. Calvin and Co., Box 284, Marietta, O., CA $2,996,429, est. $3,474,000, B. conc. paving on widned approx. base 7.127 mi. Section WAS 7-15.84-21.97 State Rte. 7 in Marietta and Warren Twps. Proj. 658 Washington Co. Bids Dec. 24. Grand total $7,403,176. CD 12/15.

▲† Luria Engineering Co., Div. Luria Steel & Trading Corp., 1745 Eaton Ave., Bethlehem, Pa., CA $1,586,837, Aircraft MAINTENANCE DOCKS to support Air Force Bombers and Cargo Missions, Wright-Patterson Air Force Base, DAYTON, O. Commander, AMC Aeronautical Systems Center, Wright-Patterson Air Force Base, Dayton, O. CD 3/12/58.

▲ ILLINOIS—Dpt. P. Wks. & Bldgs., Div. Hys., Centennial Bldg., Springfield.

Ill., M. F. McDermott Co., 30 N. LaSalle St., Chicago, Ill., CA $1,125,740, 3 grade separation structures on Northwest Expressway, Cook Co., CA $1,298,806, build railroad subway structure on Northwest Expressway, Cook Co.

Ill., Bethlehem Steel Co., 701 E. 3 St., Bethlehem, Pa., CA $1,496,208, furnish and fabricate structural steel for 5 span subway on Northwest Expressway, Cook Co. CD 12/22.

Ill., Thos. M. Madden Co., 3410 Van Buren St., Chicago, Ill., CA $971,888, 1 span subway str. over Congress St. Expressway and CTA RR in Forest Park, Cook Co. Grand total $4,892,641. CD 12/3.

ILLINOIS—Dpt. P. Wks. & Bldgs., Div. Hys., Centennial Bldg., Springfield.

Ill., A. Albergo Constr. Co., 6422 W. Armitage St., Chicago, Ill., CA $546,424, railroad relocation, 1.4 mi., Congress St. Expressway, Cook Co. CD 12/22, under LB.

Newland Excavating & Paving Co., 4972 Archer Ave., Chicago, Ill., LB $112,000, reservoir & pumping sta., Lot A, ASF, Ill., Village, Village Hall, Alsip, Ill., Edwin Hancock Engineering Co., 1509 W. Jackson Blvd., Chicago, Ill., engr.

G. L. Tarlton Constr. Co., 5500 W. Park St., St. Louis, Mo., CA $570,760, Div. 1, 4th St. pumping station, Divs. E, F & H, incl. 7,800 ft. sewers and channel imprvs., CHARLESTON, Ill., City, City Hall, Charleston, Ill. CD 12/18, under LB.

National Constr. Co., 23500 Lakeland Blvd., Cleveland 23, O., LB $208,550, est. $300,000, 12 bidders), storm and sanitary sewers along South Rd., BROOK PARK, O. Village, 5950 Eastland Rd., Brook Park, O. C. W. Courtney Engineering Co., The Arcade, Cleveland 14, O., engrs. Bids Dec. 28.

Merritt-Chapman & Scott Corp., Standard Bldg., Cleveland 13, O., LB $291,568, est. $300,000 (3 bidders), bulkheading access road to W. 6th St. Pier, CLEVELAND, O. City, Dpt. Port Control, City Hall, Cleveland 14, O. Osborn Engineering Co., 701 Euclid Ave., Cleveland, O., engrs. Bids Dec. 18. CD 11/7/52.

▲ Kenny Constr. Co., 3220 Oakton St., Skokie, Ill., CA $1,138,250, Upper DesPlaines intercepting sewer, Contr. 11 F, Wheeling, CHICAGO, ILL. Metropolitan Sanitary Dist. of Greater Chicago, 100 E. Erie St., Chicago, Ill. CD 12/12, under LB.

▲ John C. Tully Co., 33 N. LaSalle St., Chicago, Ill., CA $1,084,000, SW intercepting sewer, Hodgkins Cont. 15, CHICAGO, ILL. Metropolitan Sanitary Dist. of Greater Chicago, 100 E. Erie St., Chicago, Ill. CD 12/23, under LB.

J. M. Corbett Co., 2500 S. Corbett St., Chicago, Ill., LB $131,800 (5 bidders), RUNWAY AND TAXIWAY IMPROVEMENTS, Meigs Air Field, CHICAGO, ILL. Dpt. of Purchases, City Hall, Chicago, Ill. Bids Dec. 19. CD 9/28/56.

▲ Consolidated Constr. Co., 101 S. Wells St., Chicago, Ill., CA $1,293,822, Kostner Ave., sewer sys., Cont. 4-C, Spec. 80.82-58-9, CHICAGO, ILL. City, City Hall, Chicago, Ill. CD 12/17, under LB.

▲ States Improvement Co., Inc., 1305 S. 5th Ave., Maywood, Ill., LB $1,162,050, bascule bridge over Chicago River, Dearborn St., Spec. 80.77-58-1, CHICAGO, ILL. City, City Hall, Chicago, Ill. Bids Dec. 29. CD 12/16.

Kieffer Bros. Constr. Co., Rural Rte., Mount Carmel, Ill., LB $62,055, Section E, water sys. imprvs., water distr. lines, NEOGA, ILL. City of Neoga, City Hall, Neoga, Ill. CD 8/12.

William Fewell, Contractor, Wood River, Ill., CA $90,915, sewage treatment plant, HIGHLAND, ILL. City of Highland, City Hall, Highland, Ill.

† Kuhne Simmons Co., Inc., Box 680, Champaign, Ill., LB $494,950 (9 bidders), ICBM, IRBM training facilities, Site II at Chanute Air Force Base, ENG-11-032-59-1, RANTOUL, ILL. U. S. Eng., 475 Merchandise Mart, Chicago, Ill. Bids Dec. 16. CD 11/24.

▲ WISCONSIN AND MINNESOTA—State Hy. Comm. of Wisconsin and Comm. Hys. of State of Minnesota, Room 622, State Office Bldg., Madison, Wis., Bids opened 12/10.

Wis.-Minn.—U. S. Steel Corporation, 71 Broadway, New York, N. Y., LB $2,334,943, superstructure metal work for Structure B-16-5, Wisconsin or 9030, Minnesota, Duluth-Superior Interstate Bridge, Interstate Hy. 35, Contr. 1, Proj. I-35-3(19)262, St. Louis Co., Minnesota and Douglas Co., Wisconsin; LB $3,005,788, combination of Contrs. 1 and 2, St. Louis Co., Minnesota and Douglas Co., Wisconsin.

Wis.-Minn.—Wisconsin Bridge & Iron Co., 5023 N. 35 St., Milwaukee, Wis., LB $658,738, Contr. 2, St. Louis Co., Minnesota and Douglas Co., Wisconsin. CD 12/4.

WISCONSIN—State Hy. Comm., State Office Bldg., Madison.

R. T. Madden Co., 109 N. East St., Janesville, Wis., CA $886,050, base and con. pavement 5.011 mi., U. S. H. 14-Illinois State Line (Turtle Creek-Illinois State Line Section), IH-90, Contr. 1, Proj. 1-90-3 (17)182, Rock Co. Bids Dec. 23. CD 12/31, under LB.

BUILDINGS—LB & CA

▲ Paugh & Brown, Inc., 6007 Euclid Ave., Cleveland 3, O., LB $1,090,018, est. $1,650,000 (13 bidders), general constr. JUNIOR HIGH SCHOOL on Elinore Ave., EUCLID, O. Bd. Educ., 23131 Lake Shore Blvd., Euclid, O. Bids Dec. 16. CD 11/25.

▲ Victory Constr. Co., 5735 N. Dixie, Dayton, O. Owner builds, $1,000,000, 120 HOMES, Stroop Rd. from Meadowlawn school in East Kettering area, KETTERING, O. CD 11/26.

† Edward P. Allison Co., 300 W. Washington St., Chicago 6, Ill., LB $433,000, (10 bidders), MAIN POST OFFICE ALTERATIONS, CHICAGO, ILL. General Services Admin., 219 S. Clark St., Chicago 4, Ill. W. F. Lawrence, ch. engr., 219 S. Clark St., Chicago, Ill. Bids Dec. 22. CD 10/25/44.

Hugh Gibson Bldg. Contractor, Inc., 207 E. Morgan St., Jacksonville, Ill., CA $428,425, SCHOOL OF NURSING WING, JACKSONVILLE, ILL. Passavant Memorial Hospital, Jacksonville, Ill. Bids Dec. 19. CD 8/12.

Oscar Bohlin & Co., 335 Main St., Skokie, Ill., CA $470,000, DIAL OFFICE, Deerpath E. of Green Bay Rd., LAKE FOREST, ILL. Illinois Bell Telephone Co., 212 W. Washington St., Chicago, Ill. Holabird & Root, & Burgee, 189 N. Wabash Ave., Chicago, Ill., archts.

▲ E. W. Sprout Constr. Co., 173 W. Madison St., Chicago 2, Ill., LB $1,283,770, HOSPITAL BLDGS., NURSES' RESIDENCE, MURPHYSBORO, ILL. St. Joseph Memorial Hospital, Murphysboro, Ill. Consoer & Morgan, 360 E. Grand St., Chicago 11, Ill., archts.

Ockerlund Constr. Co., 4909 N. Lincoln Ave., Chicago, Ill., CA $725,000, JUNIOR HIGH SCHOOL, NORTHBROOK, ILL. School Distr. No. 28, 1000 Waukegan Rd., Northbrook, Ill. Bids Dec. 9. CD 12/4.

Coath & Goss, Inc., 740 N. Cicero Ave., Chicago, Ill., LB $482,378, EMERSON GRADE SCHOOL Addn., 900 Washington St., OAK PARK, ILL. School Dist. 97, 122 Forest Ave., Oak Park, Ill. Bids Dec. 23. CD 12/10.

▲ Quonco, Inc., 2822 Roosevelt Rd., Indianapolis, Ind., CA Est. $1,000,000, GRAIN STORAGE TERMINAL, service bldg., INDIANAPOLIS, IND. Indianapolis Grain Warehouse Co., South Field, Indianapolis, Ind. CD 1/30/57.

▲ Schumaker Constr., Inc., E. Michigan St. and Wamke Rd., Michigan City, Ind., LB $1,029,900, 7 story, low HOUSING project, management and maintenance bldg., sewers, water mains, electric distribution sys., paving, Proj. 19-1, MICHIGAN CITY, IND., Michigan City Housing Auth., Court House, Michigan City, Ind. Bids Dec. 23. CD 12/16.

Peters Constr. Co., 2640 N. Humbold Ave., Milwaukee, Wis., CA est. $250,000, 1 story, 154x214 ft. WAREHOUSE-OFFICE addn., MILWAUKEE, WIS., Downing Box Co., 3832 N. 3 St., Milwaukee, Wis., Fritz von Grossmann, 5455 W. Burleigh St., Milwaukee, Wis., archt.

J. P. Jansen, 5376 N. Teutonia Ave., Milwaukee, Wis., CA Est. $420,000, 2 story, bsmnt., 46x322 ft. and 46x155 ft. APARTMENT, MILWAUKEE, WIS., George Bockl, 2040 W. Wisconsin Ave., Milwaukee, Wis. R. Rasche, 601 W. Capitol Dr., Milwaukee, Wis., archt.

▲ Hammon Constr. Co., 408 Commercial St., Manitowoc, Wis., CA $1,938,434, general contract, high SCHOOL, SHEBOYGAN, WIS. Bd. Educ., Sheboygan, Wis. Bids Dec. 13. CD 12/24, under LB.

WEST OF MISSISSIPPI

HEAVY CONSTRUCTION—BA

† Tex., Fort Worth—EROSION CONTROL—BA 1/21—U. S. Eng., 100 W. Vickery, erosion control and landscaping, Carswell Air Force Base, Eng. 41-443-59-29. CD 1/2.

† Mont., Opheim—WELL—BA 1/22—U. S. Eng., 1519 S. Alaskan Way, Seattle 4, Wash., drilling and casing well approx. 350 ft. deep at Opheim Air Force Station, Eng. 45-108-59-44.

Minn., Robbinsdale—BA 1/28—City, City Hall, 890 lin. ft. 12 to 42-in. storm sewer, grading and surf., $200,000. Plans deposit $5. CD 9/27/54.

▲† Ark., Little Rock—APRON, ETC.—BA 2/3—U. S. Eng., P. O. Box 867, apron operational alert-constr. alert apron and taxiway, Little Rock Air Force Base, ENG-03-050-59-10. $1,000,000-$3,000,000. CD 12/31.

† N. M., Las Cruces—LANDSCAPING AND SPRINKLERS SYSTEMS—BA About 2/5—U. S. Eng., P. O. Box 1538, Albuquerque, landscaping and sprinklers sys. for Engineering Analysis Support Facility, White Sands Missile Range, ENG-29-005-59-70. CD 9/5, under Public Buildings.

† N. M., Albuquerque—ELECTRICAL TIE LINE—BA About 2/10—U. S. Eng., P. O. Box 1538, Wherry Housing electrical tie line, incl. 13,200 lin. ft. transmission line on poles, Sandia Base, ENG-29-009-59-64, CD 12/20/57.

▲ Texas—NATURAL GAS LINE—Bids Asked—Coastal Transmission Corp., Bank of Commerce Bldg., Houston, 60 mi. natural gas line, Bay City to Texas City, $2,400,000. CD 6/13.

BUILDINGS—BA

Mo., Kirksville—SCHOOL—BA 1/20—Adair Co. School Dist. 36, two 1 story, brick, masonry blocks, glass, concrete, etc. high school, $820,000. Plans deposit $50. Hellmuth, Obata & Kassebaum, Inc., 315 N. 10th St., St. Louis, Mo., archt. CD 9/12.

▲ Mo., St. Charles—HOSPITAL—BA 1/29—St. Joseph's Hospital, Sisters of St. Mary, 218 Clay St., 6 story, 85,000 sq. ft. brick, steel, concrete hospital addn., $1,750,000. Plans deposit $100. Drake-O'Meara Assocs., 212 S. Bemiston Ave., Clayton 5, Mo., archts. CD 11/20/57.

Mo., St. Charles—HOUSING—BA 2/4—St. Charles Local Housing Auth., 201 N. 2nd St., Proj. No. Mo.-6-1-16 frame dwellings and remodeling of existing masonry block bldg. $500,000. Plans deposit $100. Maguolo & Quick, 4908 Delmar Blvd., St. Louis 8, Mo., archts.-engrs. CD 9/14/56.

† N. M., Las Cruces—ENGINEER FACILITIES SHOP IEO—BA About 2/4—U. S. Eng., P. O. Box 1538, Albuquerque, 1 story, approx. 52x127 ft. concrete masonry Engineer Facilities Shop IEO, White Sands Missile Range, ENG-29-005-59-62. CD 9/5.

† Minn., Walker—ARMY TRAINING CENTER—BA About 2/5—U. S. Eng., 1217 U. S. Post Office and Custom House, St. Paul 1, 1 story, 52x83 ft. concrete, block, army training center, Inv. No. 21-018-59-16. CD 1/9.

† N. M., Las Cruces—SPECIAL WEAPONS ASSEMBLY FACILITY—BA About 2/18—U. S. Eng., P. O. Box 1538, Albuquerque, special weapons assembly facilities, incl. 6, totaling approx. 28,900 sq. ft., concrete, masonry, and steel bldgs. and utilities incl. electrical substation, sewage treatment sys. and security lighting sys., White Sands Missile Range, ENG-29-005-59-76. CD 9/5.

HEAVY CONSTRUCTION—LB & CA

▲ MINNESOTA—State Hy. Dpt., 124b University Ave., St. Paul.

W. D. Gierstsen Co., 4501 Kenwood Ave. South, Minneapolis, Minn., CA $1,722,517, bridge No. 9089 over Minnesota River, Chicago and North Western RR and Trunk Hy. 14 at Mankato, Blue Earth and Nicollet Counties. Bids Dec. 23. CD 12/30, under LB.

† Pine Bluff Sand & Gravel Co., 104 Nebraska St., Pine Bluff, Ark., CA $253,295, constr. and repair revetment, Browers Bend, Missouri River, Saline, CIVENG-25-Dec-59-26, IOWA U. S. Eng., 1709 Jackson St., Omaha, Neb. Bids Dec. 23. CD 12/10.

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† Messina Bros. Constr. Co., 1200 W. 8th, Kansas City, Mo. LB $92,771, est. $93,100. (2 bidders); ground powered equipment Maintenance Shop and second floor AFRTC Hangar Shop, Richards-Gebaur Air Force Base. ENG-23-208-59-28, GRANDVIEW, MO. U. S. Eng., 1800 Federal Office Bldg., Kansas City, Mo. Bids Dec. 17. CD 11/21.

† Weeks Constr. Co., 1814 Harrison, Kansas City, Mo. CA $203,777, est. $219,800 (7 bidders); 2 story, 8,600 sq. ft. concrete, masonry walls, brick facing, air-condition, Division Headquarters, Richards-Gebaur Air Force Base. ENG-23-028-59-29, GRANDVIEW, MO. U.-S. Eng., 1800 Federal Office Bldg., Kansas City, Mo. Bids Dec. 18. CD 11/21.

▲† Newport News Shipbuilding & Dry Dock Co., 38 and Wash. Ave., Newport News, Virginia. CA $1,472,144, two 62,200 horsepower hydraulic turbines, Bull Shoals Dam Mountain Home, CIVENG-03-050-59-16, ARKANSAS. U. S. Eng., P. O. Box 867, Little Rock, Ark. Bids Dec. 4. CD 12/24, under LB.

† J. J. Hanighan Co., 915 21 N. 20th St., Omaha, Neb. LB $88,283 (4 bidders) air-conditioning and lighting, U. S. Post Office, OMAHA, NEB. General Services Admin., P. Bldgs. Service, 2306 E. Bannister Rd., Kansas City 10, Mo. Bids Dec. 15.

† Paragon Heating & Plumbing Co., 7141 Prospect, Kansas City, Mo. LB $91,658, air-conditioning, lighting, etc. U. S. Post Office, LAWRENCE, KAN. General Services Admin., P. Bldgs. Service, 2306 E. Bannister Rd., Kansas City 10, Mo. Bids Dec. 29. CD 12/16.

† Martin K. Eby Constr. Co., 610 N. Main, Wichita, Kan. CA $105,101, est. $107,624 (6 bidders). Ordnance Storage, Multi-Cubical Magazines and Utilities, Forties Air Force Base. ENG-23-028-59-30, TOPEKA, KAN. U. S. Eng., 1800 Federal Office Bldg., Kansas City, Mo. Bids Dec. 17. CD 12/3.

† E. B. Bush Constr. Co., Box 5128, Oklahoma City, Okla. LB $90,220, est. $100,000, shop for refueling vehicles, outside utilities, access drives, parking area curbs and gutters, Clinton Sherman Air Force Base, NBy 19813, Foss, OKLAHOMA. Officer in Charge of Constr., 8th Naval Distr., Bldg. 16, U. S. Naval Station, New Orleans (Algiers), La. Bids Dec. 18. CD 12/5.

† A. B. C. Constr. Co., 235 SW 33 St., Tulsa, Okla., LB $163,264 est. $177,468, bridge over Claybank Creek, U.S. 169, Eng.-34-066-59-42, LB $102,909 est. $114,461, bridge over Talda Creek, U.S. 169, Eng. 34-066-59-43, Oologah Reservoir, OKLAHOMA. U. S. Eng., Box 61, Tulsa, Okla. Bids Dec. 17. CD 12/10.

Brick Constr. Co., Tri-State Bldg., Tulsa, LB $456,048 est. $481,007, relocate U.S. 169 at California Creek, Eng. 34-066-59-42, Oologah Reservoir, Oklahoma. U. S. Eng., Box 61, Tulsa, Okla. Bids Dec. 17. CD 12/10.

Imperial Paving Co., 700 E. Grand St., Oklahoma City 6, Okla. LB $248,693, est. $266,378, relocate U.S. 169 at Talda Creek, Eng. 34-066-59-33, Oologah Reservoir, Oklahoma.

† Gouker Bulldozer Service, Meeker, Okla., LB $76,672 est. $75,000 flood water control, Sandy Creek Sites 29, 30, 31 Ada, Inv. No. 2, OKLAHOMA, Sandy Creek Water and Soil Conservancy Distr., 525 Main St., Ada, Okla. Lester King, 504 W. 21 St., Ada, Okla., engr. Bids Dec. 17. CD 11/21.

Woods Constr. Co., 7486 E. Admiral St., Tulsa, Okla. CA $199,100, est. $225,000, sewage disposal plant and appurtenances, BROKEN ARROW, OKLA. City of Broken Arrow, City Hall, Broken Arrow, Okla. Bids Dec. 15. Awarded Dec. 23. CD 12/2.

Metropolitan Paving Co., 300 S. Indiana St., Oklahoma City, Okla. CA $159,886, est. $162,000, grading and asphalt pavement Distr. 1360, OKLAHOMA CITY, OKLA. City, City Hall, Oklahoma City, Okla. Awarded Dec. 30. CD 7/27/55.

Brown & Day, 2310 E. 48 St., Tulsa, Okla. CA $79,159, est. $85,000, water lines to Sky Line Ridge Addn. TULSA, OKLA. Elmer Anderson, 2918 E. 15 St., Tulsa, Okla. Owen Mansur & Steele, 1642 S. Boston St., Tulsa, Okla., engrs. Awarded Dec. 18.

▲ Brown & Root Inc., 4100 Clinton Dr., Houston, Tex. CA $160,000, short gas line, water crossing under Galveston Bay between Dickinson Point and South Point, Galveston area, Galveston Co., TEXAS. Coastal Transmission Corp., Bank of Commerce Bldg., Houston, Tex. CD 6/13.

Parson Co., Alice, Tex. CA $745,000. 90 mi. 3-14 in. lateral gas lines, Corpus Christi, area. (Texas).

▲† Trinity Constr. Co., Inc., Box 3024, Houston, Tex. CA $1,277,338, outlet works for Canyon Dam Proj., Guadalupe River, New Braunfels, ENG-41-443-59-22, TEXAS. U. S. Eng., Box 1600, Fort Worth, Tex. Bids Dec. 23. CD 12/31, under LB.

Midland Telephone Co., 10353 Denton Dr., Dallas, Tex. Owner builds. $88,000, rebuilding rural pole telephone lines, Blum area in Hill Co., TEXAS. CD 12/18.

Gilvin-Terrill, Inc., 413 E. 3 St., Amarillo, Tex. CA $97,657, 6 projects various streets, asphalt paving, AMARILLO, TEX. City, City Hall, Amarillo, Tex. Bids Dec. 4.

† Uvalde Constr. Co., P. O. Box 1028n, Dallas 7, Tex. LB $92,465, base bid, repair runways and taxiways at Carswell Air Force Base, FORT WORTH, TEX. Procurement Office, Carswell Air Force Base, Fort Worth, Tex. CD 9/9.

L. R. Fanning, Municipal Airport, Lubbock, Tex. CA $133,125, 53 blocks street paving, IDALOU, TEX. City, City Hall, Idalou, Tex. Lubbock Engineering Co., 1648 Main St., Lubbock, Tex., engr. Bids Dec. 15.

City, City Hall, McAllen, Tex. Owner builds. $90,000, water laterals, McALLEN, TEX. CD 12/30/57.

COLORADO — State Hy. Dpt., 4201 East Arkansas, Denver.

Dominic Leone Constr. Co., 818 Oak St., Trinidad, Colo., CA $989,661, road mix asph. surf. 1.437 mi., Colo. Proj. No. I-25-1(12) 13 (I-042-3(3)), Unit No. 2, Las Animas Co. Bids Dec. 19. CD 12/10.

Hansel Phelps Constr. Co., Greeley, Colo., LB $111,829, expansion existing water treatment plant, WESTMINSTER, COLO. City, City Hall, Westminster, Colo. Bids Dec. 22. CD 12/12.

NEW MEXICO—State Hy. Comn., State Hy. Bldg., Cerrillos Rd., Santa Fe.

Wayne A. Lowdermilk, Inc., P.O. Box 1165, Escanola, N. M., CA $442,581, est. $448,592 (3 bidders). Jct. SR-83 toward Mescalero. Proj. No. S-1278(1), Otero Co. Bids Dec. 30, awarded Dec. 30. CD 12/17.

† U. S. Eng., Box 1538, Albuquerque, N. M., cancelled bids to have been opened Dec. 30, STORAGE, AMMO AIR DEFENSE, Kirtland Air Force Base, Inv. No. ENG-29-005-59-48, ALBUQUERQUE, N. M. CD 12/2.

▲ COLORADO—State Hy. Dpt., 4201 East Arkansas, Denver. Bids Dec. 30.

A. S. Horner Constr. Co., 118 South Pecos, Denver, Colo., LB $2,336,575, alternate 1, $2,227,317 alternate 2, $2,439,006 alternate 3, grading and structures, Colo. Proj. 1-70-4(7), 303 Watkins and Strasburg, Adams and Arapahoe Counties. CD 12/23.

▲ COLORADO — State Hy. Dpt., 4201 East Arkansas, Denver.

Colo.—McMillon Constr. Co., 3050 South Huron St., Englewood, Colo., CA $478,888, est. $498,000, structures grading asph. surf. 4.582 mi., Colorado Proj. No. BF001-5(10), Fort Lyon and Las Animas, Bent Co.

Colo.—Brannon Sand & Gravel Co., 4800 Brighton Blvd., Denver, Colo., CA $253,349 est. $254,000, grading, drainage and plant mixed asph. surf. 1.263 mi., Colorado Proj. No. F029016), Denver Co.

Colo.—C. L. Hubner Co., 4200 East Jewell, Denver, Colo., CA $1,056,886 est. $1,200,000, grading and structures, 6.281 mi., Colorado Project No. I-25-3(4)229, I-002-1(13), Greeley, Weld Co., grand total $1,789,122. Bids Dec. 30 awarded. CD 12/23.

COLORADO—State Hy. Dpt., 4201 East Arkansas, Denver.

Pioneer Constr. Co., 29 Lane Hy. 96, Pueblo, Colo., CA $224,380 est. $246,000, grading, stabilization, structures and plant mixed asph. surf. 9.826 mi., Colorado Proj. No. S-0016(15), Kiowa Co. Bids Dec. 23, awarded. CD 12/10.

COLORADO—State Hy. Dpt., 4201 East Arkansas, Denver.

Kilgore Constr. Co., 7991 West 6 Ave., Lakewood, Colo., CA $928,259 est. $934,000, grading, structures, 6 conc. pavement 1.825 mi., Colorado Proj. No. I-25-2(27), 143 Colorado Spring Freeway, El Paso Co. Bids Dec. 23. CD 12/12.

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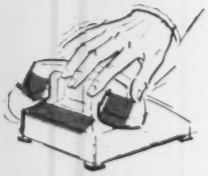

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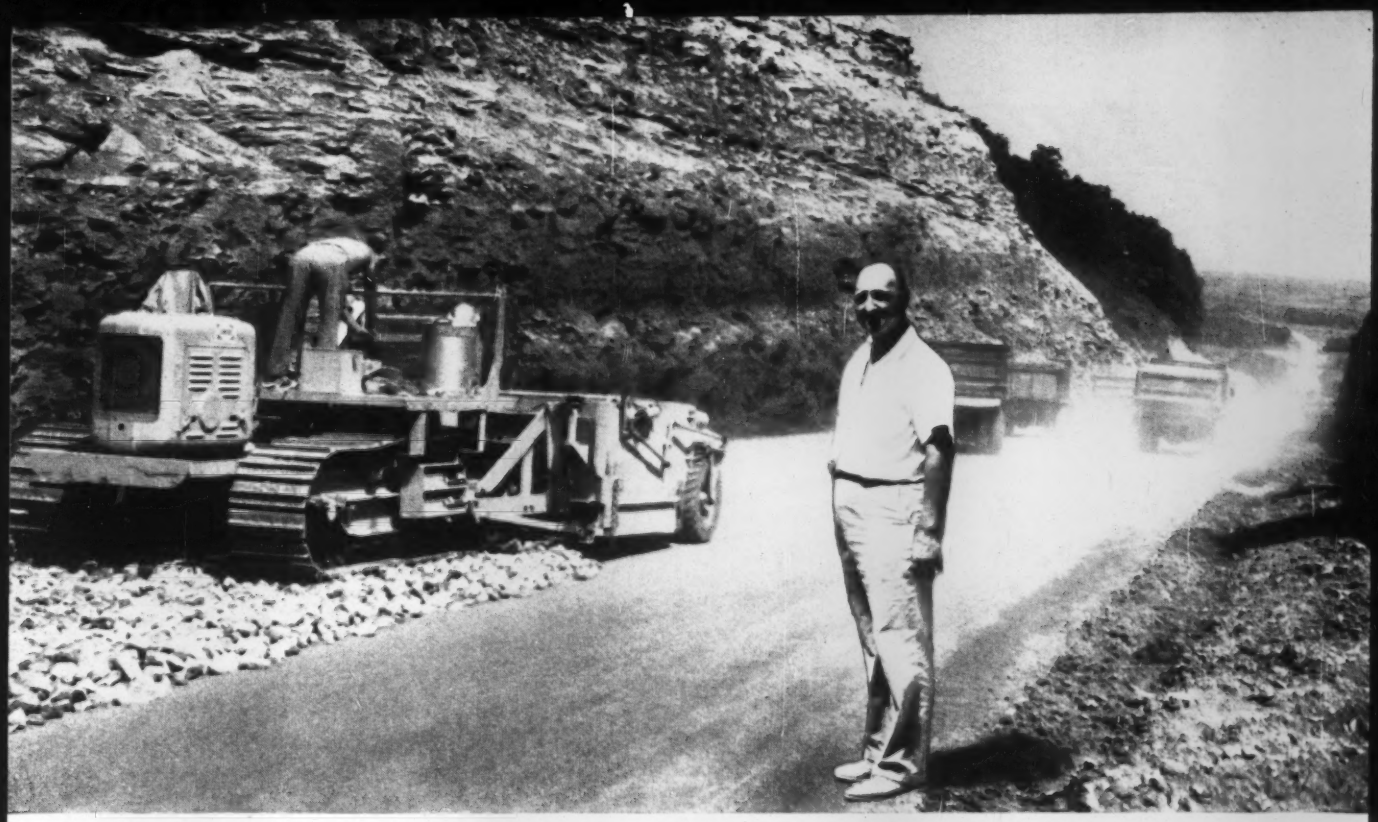

Dick Ellis watches Blaw-Knox Base Paver lay down six inch stone on a nine mile stretch of U. S. Route 27 between Stanford and Somerset, Kentucky.

"It's hard to believe there could be so much difference"

"We've been laying 3,000 tons of six inch material a day. The best we ever laid before in an eight hour day was 2,000 tons of No. 1 stone (4"-1½"). That was with two spreaders, too," reports Dick Ellis, superintendent for Corum and Edwards of Madisonville, Kentucky.

"This Blaw-Knox Base Paver handles a seven ton load in sixty seconds. Every 500 feet the base paver back-tracks and shifts for another pass. That gives us three passes at the 36-foot wide road bed. At intersections we take just ten minutes to adjust the box to 16 feet, and in a few more minutes the approaches are knocked out, putting the rig back on the main road," he adds.

Corum and Edwards, like contractors all over America are reaping the benefits of modern, high capacity machines like the Blaw-Knox Base Paver with its specifically engineered tractor and oscillating screed, to meet the demands of today's job—at a profit. Your Blaw-Knox distributor will be glad to give you full details on the Blaw-Knox Base Paver. Why not call him soon?

BLAW-KNOX

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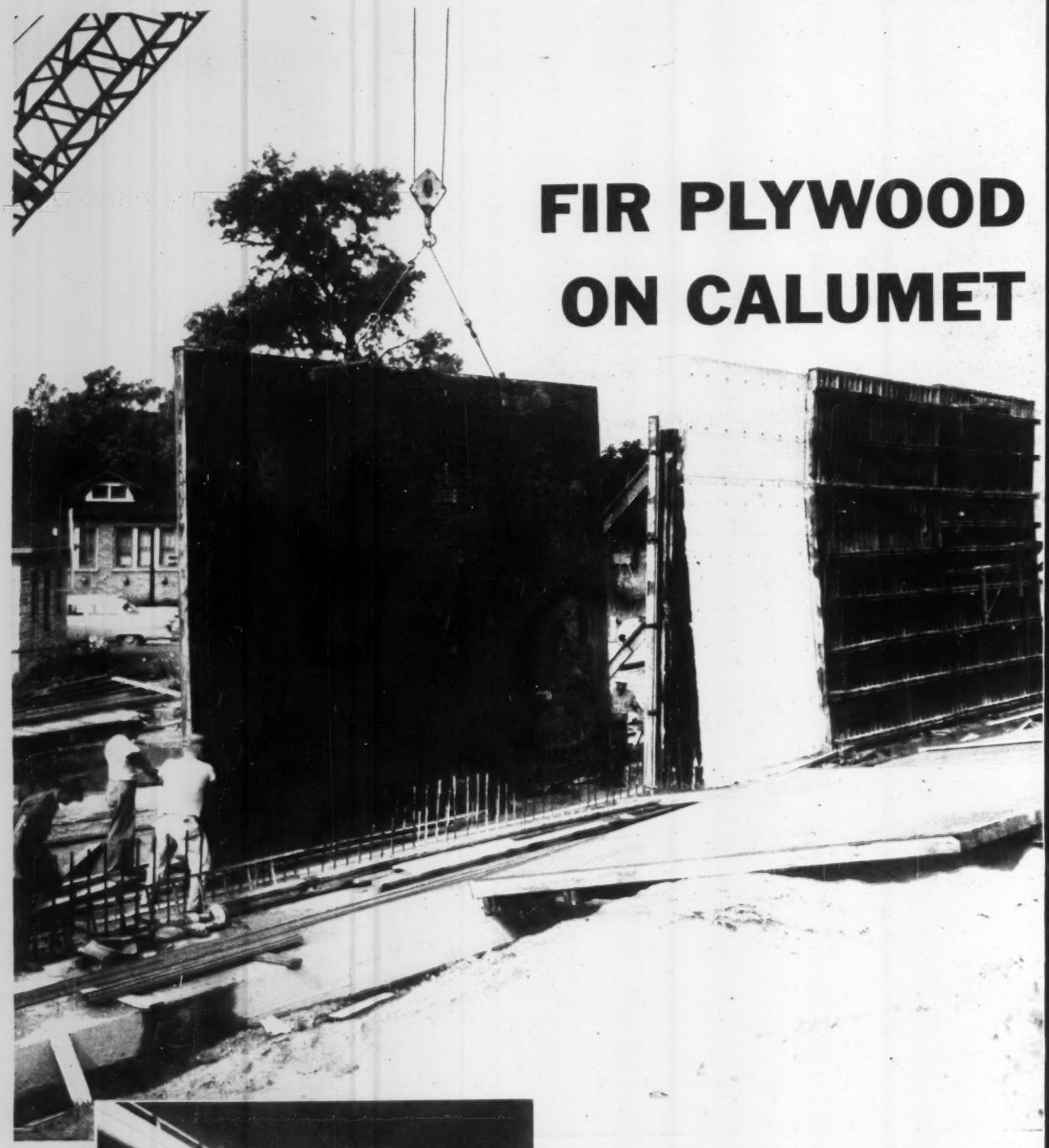
FIR PLYWOOD ON CALUMET



Big prefabricated fir plywood form sections helped cut costs, speed work on 8-mile long Calumet Skyway.

CALUMET SKYWAY TOLL BRIDGE LOCATION:
West end of Indiana Toll Road to downtown Chicago

COORDINATING ENGINEERS:
De Leuw Cather & Company

CONTRACTORS FOR FORMWORK:
R. R. Anderson Co., Chicago
Arcole Midwest Corp., Skokie, Ill.
M. J. Boyle & Co., Chicago
J. M. Corbett Co., Chicago
Kenny Construction Co., Skokie, Ill.

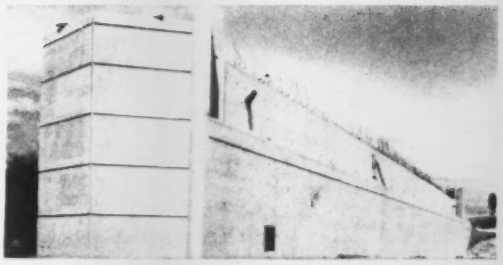
FORMS SPEED CONCRETING SKYWAY TOLL BRIDGE

GIANT FIR PLYWOOD FORM SECTIONS, as large as 28' x 31', played an important role in keeping work moving at a near record clip on the new eight-mile long Calumet Skyway which links the Chicago business district with the Indiana toll road.

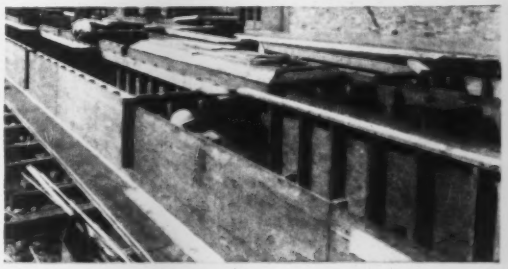
The job features one of the world's longest retaining walls along three of the eight miles. Over 30 feet tall in places, the wall was formed by leap-frogging the big prefabricated plywood form sections. In most instances, forms were built to maximum wall height and simply cut down for shorter walls. Plywood forms were also used for abutments at street crossings and for beams and bridge decks on overpasses.

Plywood was called for in the job specifications for uniformly smooth concrete, but contractors on the job credit plywood's ease of fabrication and handling—coupled with a high number of re-uses (up to 15 or 20 pours)—with holding down costs as well.

All told, over 300,000 square feet of plywood forms were used by the five contractors concerned with pouring walls, abutments and decks.



Rustication lines on walls and abutments were achieved by nailing strips to face of plywood forms.



Fir plywood was also used for forming reinforced concrete beams and deck slabs on entrance ramps.

DOUGLAS FIR PLYWOOD ASSOCIATION

TACOMA 2, WASHINGTON

—a non-profit industry organization devoted to research, promotion and quality control

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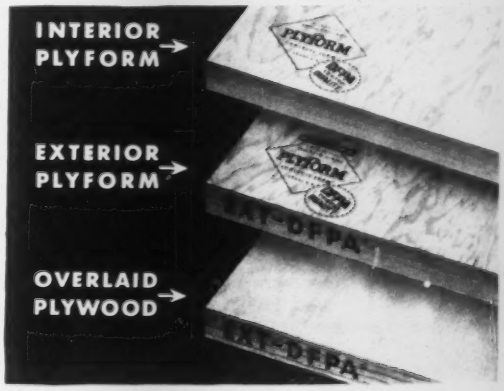
Letters DFPA indicate material has been inspected and tested under rigid DFPA-Industry quality control program. Grades manufactured expressly for concrete form work include:

INTERIOR PLYFORM—*standard concrete form grade plywood made with moisture-resistant glue. Gives multiple (10-12) re-uses.*

EXTERIOR PLYFORM—*standard concrete form grade plywood made with waterproof glue to give as many as 25 or more re-uses.*

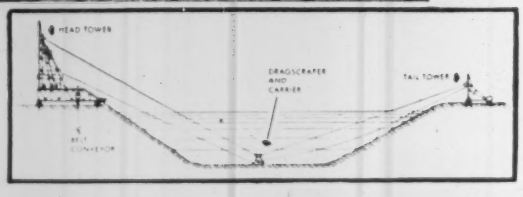
OVERLAID PLYWOOD—*special panel with hard, glossy, plastic-like fused resin fiber surfaces. Forms smoothest concrete, up to 200 re-uses.*



Tough Digging, Long Hauls... Routine Jobs for Sauerman DragScrapers

240-Ft. Bank... 350-Ft. Haul

This mobile Sauerman Tower Excavator digs 480 yds. per hr. on an average haul of 350 ft. from a high bank to a portable field hopper. The 12-yd. Crescent DragScraper operates between steel head and tail towers. The towers are mounted on two sets of railroad tracks and ride on four sets of trucks. DragScraper power is supplied by two hoists mounted on the head tower. One hoist operates the load and pull-back cables, the other is used to tension the track cable. The hoists are controlled by one operator located in the cab on the tower. The load cable handles over 400,000 tons of material before replacement.



Drawing shows typical mobile tower excavator digging in wet pit.

75 Ft. Under Water... 800-Ft. Span

A 5-yd. rapid-shifting DragScraper supplies about 200 yds. per hr. to the plant hopper in background. Bridle tower in foreground is one of two supporting the bridle shifting cable which is controlled by the third drum of the Sauerman hoist. Lateral shifting of the DragScraper's line of operation is readily accomplished by power-shifting the trolley and tail block to a new position on the bridle cable. The DragScraper is digging 75 ft. under water and the operating span is 800 ft. from head frame to the bridle towers. Over a million tons have been excavated from this pit. The DragScraper often operates 24 hrs. a day to handle contract demands.

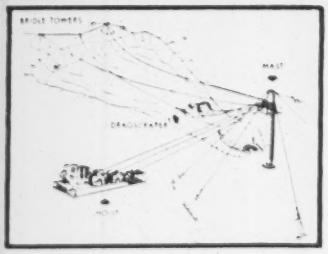


Diagram shows details of Sauerman rapid-shifting DragScraper.

Sauerman machines dig and haul in one continuous operation . . . work on high bank, dry pit or under water . . . handle most bulk materials. Consult Sauerman engineers about your job. We will promptly supply appropriate literature.

SAUERMAN BROS., INC. 632 SO. 28th AVE. BELLWOOD, ILL.
Linden 4-4892 • Cable CABEX—Bellwood, Illinois

Crescent Scrapers • Slackline and Tautline Cableways • Durolite Blocks

▲ Mel Buck Constr. Co., Cascade, Mont. CA $2,588,633. 12 COLLEGE buildings incl. student center, admin. bldg. and library, classroom and office bldgs., girl's dormitory and heating and maintenance plant for Sisters of Charity of Providence, GREAT FALLS, MONT. College of Great Falls, 1618 3 Ave. N., Great Falls, Mont. CD 12/30, under LB.

Olson Constr. Co., 840 S. Jason, Denver, Colo., CA $750,000 est., $1,500,000, 3 story, Town Park HOTEL bldg., PUEBLO, COLO. L. L. Stroud Enterprises, 2736 Central Ave., Phoenix, Ariz. CD 8/6.

BUILDINGS—LB & CA

H. O. Mikkelson, 20 West 59th St., Minneapolis, Minn., CA $556,900 general constr., 1 story ELEMENTARY SCHOOL, OSSEO, MINN. Bd. Educ., Osseo, Minn. Bids Dec. 16. CD 12/22, under LB.

Chalmers & Borton, 200 E. 1st St., Hutchinson, Kan., CA Est. Over $110,000, 400,000 bushel concrete GRAIN ELEVATOR addn., incl. 12 bin, each 120 ft. high and 12 ft. in diameter, HAVEN, KAN. Farmers Cooperative Grain Co., Haven, Kan.

James Bros. Constr. Co., 111 NW 23 St., Oklahoma City, Okla., CA Est. $150,000, 310,000 bu. cap. GRAIN ELEVATOR AMES, OKLA. Farmers Co-operative Elevator Assn., Ames, Okla. Chalmers & Borton, 200 E. 1 St., Hutchinson, Kan., engr. Awarded Dec. 22.

▲ † Rob. E. McKee, General Contractor Inc., Box 1748, Albuquerque, N. M., CA $3,397,240, thirteen 13,750 sq. ft. each LABORATORIES, eight 4,800 sq. ft. shops and 25,000 sq. ft. shop addns. Fort Bliss, ENG-29-005-59-21, EL PASO, TEX. U. S. Eng., Box 1538, Alburquerque, N. M. Bids Nov. 18. CD 12/30, under LB.

V. J. Beauchamp, Ridgecrest Park Estates, Garland, Tex. Owner Builds. $718,100, 42 DWELLINGS, Ridgecrest Park Estates Subdivision, GARLAND, TEX. CD 12/2.

Jim McCullick, 800 Winstead Lane, Austin, Tex., CA $600,000, MOTEL and SWIMMING POOL, TYLER, TEX. Holiday Inn, Tex-Mex Corp., John R. Manser, 4952 Hall St., Dallas, Tex.

Mid Continent Development Co. (subsidiary of Allen Enterprises) 2 and Fillmore, Denver, Colo., CA $500,000, 6 story, OFFICE bldg., BOULDER, COLO. Allen Enterprises, Inc., Mile High Center Bldg., Denver, Colo. CD 4/28.

▲ Doolittle Constr. Co., 4350 Broadway, Denver, Colo., CA $1,000,000, 7 story, 50 x 100 ft. research LABORATORY, DENVER, COLO. National Jewish Hospital, 2800 E. Colfax, Denver, Colo. Awarded Nov., 58. Bids Oct. 29. CD 1/5.

Sterling Steel & Supply Co., 500 Walnut, Denver, Colo., Owner Builds, $700,000, PLANT addn., W. 48 Ave. and Valley Highway, DENVER, COLO.

▲ Redding-Miller, 931 E. 6 Ave., Denver, Colo., Owner Builds, $2,000,000, 50,000 sq. ft. STORE and garage, DENVER, COLO. Paul Reddy, 105 Fillmore, Denver, Colo., archt. Neusteters, 720 16 St., Denver, Colo., lessee.

▲ Mid Continent Development Co., 2 and Fillmore, Denver, Colo., CA $2,000,000, remodeling Old Daniel and Fisher Store into wholesale merchandise mart, DENVER, COLO. Denver Merchandise Mart, Allen Enterprises, c/o L. C. Fullenwider, Inc., Equitable Bldg., Denver, Colo. CD 3/24/55.

Carney Constr. Co., Greeley, Colo., CA $235,000, 1 story, 15,000 sq. ft. packing PLANT, FORT COLLINS, COLO. Valley Packing Co., Fort Collins, Colo. CD 10/1, under LB.

FAR WEST

HEAVY CONSTRUCTION—BA

Calif., Sacramento BA 1/28—State Div. Hys., 1120 N. St., developing the grounds incl. water sys., pumps and sidewalks; planting of lawn, etc., for Div. of Hys. Material and Research Bldg. III-Sac-Material Research Bldg. CD 12/5, under public buildings.

† Calif., Victorville—ORGANIZATIONAL MAINTENANCE HANGAR—BA 1/28—U. S. Eng., 751 S. Figueroa St., Los Angeles, organizational maintenance hangar, George Air Force Base, ENG-04-353-59-48, $800,000. CD 9/9.

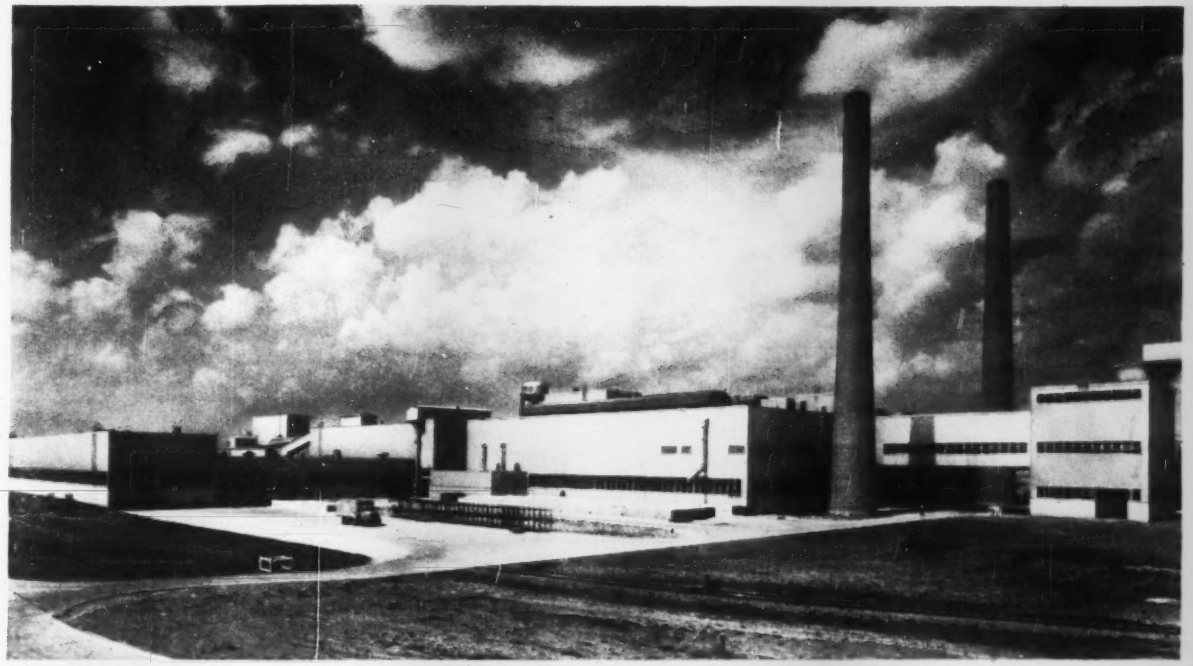
† Ariz., Chandler MAINTENANCE HANGAR—BA 1/29—U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif., organizational maintenance hangar, Williams Air Force Base, ENG-04-353-59-47, $700,000. CD 9/11.

▲† Arizona BA 2/12—Bureau Reclamation Dpt. Interior, Yuma, earthwork, pipeline and structures, South Gila Drain No. 2, Colorado River Front Work and Levee System, near Yuma, Yuma Co., 136,000 cu. yds. excavation, 11,000 lin. ft. 24 in. diameter concrete pipe, etc. Spec. No. DC-5149, adv. ENR 1/15. CD 9/4.

† Wash., Moses Lake AIRCRAFT ENGINE INSPECTION, etc.—BA 1/13—U. S. Eng., City-County Airport, Walla Walla, 25,000 sq. ft. masonry aircraft engine inspection and repair shop, Larson Air Force Base, Eng 45-164-59-17. CD 1/2.

BUILDINGS—BA

Calif., Bakersfield SCHOOL—BA 1/26—Bakersfield City School Dist., 1300 Baker St., elementary school, Pioneer and Park Sts., $430,000. Whitney Biggar, 3601 Stockdale Hy., archt. CD 12/19.



Ford turns to aluminum for economy and permanence

Walcon Panel of Alcoa Aluminum sheathes huge Nashville plant

When you build a plant of over 1,000,000 sq ft, you build for permanence and you build as economically as you can. That's why Ford Motor Co. enclosed its new Nashville, Tenn., glass plant with Alcoa® Aluminum. No weathering will ever mar its beauty or strength. No costly maintenance will ever be needed to take care of more than 2,200,000 sq ft of aluminum walls. In the long run, Ford is money ahead.

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Developments such as this in aluminum, pioneered by Alcoa, are changing industrial skylines everywhere—for obvious practical and aesthetic reasons. Complete data and technical help are available from your nearest Alcoa sales office. Call or write Aluminum Company of America, 860-A Alcoa Building, Pittsburgh 19, Pennsylvania.

Building: Ford Motor Co. Glass Plant, Nashville, Tenn.
Associate Architects and Engineers: Giffels & Vallet, Inc., and L. Rossetti, Detroit, Mich.
Panel Fabricator and Applicator: Walker Supply & Manufacturing Co., Detroit 29, Mich.

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One of six Lima Roadpackers on Illinois East-West Tollway Project pauses here for the photographer during vibratory compaction operations on access road.

Six LIMA Roadpackers deliver fast high-density compaction to speed Illinois Tollway job

"We tried all the vibratory type compactors before buying our first Lima Roadpacker in 1957. It proved without a doubt that high-density compaction need not be a slow process," says CKG Associates, Hinsdale, Ill.

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"As our work on the Tollway progressed, we bought additional units to maintain our accelerated production schedule. Today we own six Lima Roadpackers. They speed back and forth to various sections of the job at 30 mph to compact vast quantities of base material as soon as it is spread.

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The Roadpacker is equipped with six shoes, each producing 2200 vertical vibrations per minute to compact from bottom up without shoving action. Fills all voids for high-density consolidation. Entire vibration system completely sealed from dirt. Unit is designed for fast and easy maintenance.

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Outside vibratory shoes fold back easily for road width clearance to travel without special permit. As necessary, 4, 5 or 6 shoes can be used to vary width of compaction. Roadpackers compact with equal precision forward or in reverse.

You save when you lay fewer courses . . . compact in fewer passes. Lima Roadpackers will produce required density of suitable material in courses up to 12 in. Two-shoe widener attachment available . . . no need for special trench roller.

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HEAVY CONSTRUCTION—LB & CA

▲ IDAHO—State Hy. Dpt., Boise, Bids opened 12/30, Idaho—Fife Constr. Co., Brigham City, Utah, LB $1,057,707, constr. roadway, drainage structures, plant mix bit. surf., 40 ft. concrete bridge, 9.811 mi. State No. 46, Gooding Co.

Idaho—James Crick & Sons, Yardley, Wash., LB $245,496, constr. roadway, drainage structures and bit. surf. on 2.033 mi. Waha Road, Nez Perce Co. CD 12/22.

IDAHO—State Hy. Dpt., Boise, Bids opened 12/23, Idaho—Inland Asphalt Co., 10 and Havana Sts., Spokane, Wash., LB $152,977, roadway, plantmix bit. surf. on 3.215 mi. State No. 41, Kootenai Co. CD 12/15; Idaho—Carl Nelson, Logan, Utah, LB $341,428, roadway, irrigation structures and bit. surf. on 7.186 mi. U. S. 30, Cassia Co.; Idaho—Gerner, Abbott & Waldron, Tremonton, Utah, LB $270,908, roadway, drainage structures and bit. surf. on 2.661 mi. State 34, Franklin Co. CD 12/10.

▲ Fisher Contracting Co., Box 6306, Phoenix, Ariz., CA $3,137,700, 60 million gpd. filter plant, PHOENIX, ARIZ. City, City Hall, Phoenix, Ariz., awarded Dec. 8. CD 5/28/57.

Vinson Constr. Co., Box 930, Phoenix, Ariz., CA $1,517,134, est. $1,182,957, 7 mi. concrete water mains, 24 to 48 in. diameter (Phoenix, Ariz.). Yost & Garder, 112 N. Central Ave., Phoenix, Ariz., engrs., awarded Dec. 26.

▲† N. Fiorito Co., Inc., 844 W. 48 St., Seattle, Wash., CA $2,743,907, paving access RUNWAY, Fairchild Air Force Base, Inv. 59-28, SPOKANE, WASH. U. S. Eng., 1519 S. Alaskan Way, Seattle 4, Wash. Bids Dec. 10. CD 12/23 under LB.

† Basalt Rock Co., 8th and River Sts., Napa, Calif., LB $350,625 (2 bidders), stone protection along Stockton Deep Water Channel, Spec. 2445, Contra Costa and San Joaquin Counties, ENG-04-167-59-31, CALIFORNIA. U. S. Eng., 1209 8th St., Sacramento, Calif. Bids Dec. 30. CD 11/25.

▲ CALIFORNIA—State Div. Hys., 120 S. Spring St., Los Angeles, Griffith Co., 1060 S. Broadway, Los Angeles, Calif., CA $2,564,776, grading, paving 2.6 mi. 6 lane freeway between 0.3 mi. east of Fairmount Ave. and 0.5 mi. west of Lake Murray Blvd. on Hy. 80, incl. 3 bridges as part of 2 interchanges, San Diego Co. Bids Dec. 11, awarded Dec. 29. CD 12/17, under LB.

▲ Stolte Inc., 8451 San Leandro St., Oakland, Calif., and Morrison-Kundsen Co., Inc., 319 Broadway Ave., Boise, Idaho, CA $2,858,734, Upper San Leandro Filter plant No. 2, expan. in East Oakland, OAKLAND, CALIF., East Bay Municipal Utility Dist., 2130 Adeline St., Oakland, Calif. Bids Dec. 12. CD 12/19, under LB.

† Office Contrg. Officer, Bldg. 245, Travis Air Force Base, Calif., rejected bids Oct. 30 on site improvs., 48 unit armed services Proj., (FB 59-21 TRAVIS AIR FORCE BASE, CALIF., LB $96,664. CD 11/7, under LB.

† Ben C. Gerwick Inc., 417 Market St., San Francisco, Calif., LB $123,900 (4 bidders) 2 mooring islands, removing portion timber piers and replace with prestressed concrete piles, rein.-con. superstructures, NB, 20828, Spec. 20828/58 SAN FRANCISCO, CALIF. Dist. P. Wks. Office, 12th Naval Dist., Room C-112, San Bruno, Calif. Bids Dec. 23. CD 12/11.

† Senk Constr. Co., 9758 Sierra Ave., Fontana, Calif., CA $338,468, armament and electronic shop at George Air Force Base, ENG-04-353-59-33, VICTORVILLE, CALIF. U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif. Bids Dec. 18. CD 12/4.

BUILDINGS—LB & CA

▲† J. B. Warrack Co., 400 2 Ave., W. Seattle, Wash., CA $1,024,000, reinforced concrete GYMNASIUM and AUDITORIUM, addn. to Juneau-Douglas senior high school, Inv. 50-A-238, JUNEAU, ALASKA. Dist. P. Wks., Dpt. Interior, Juneau, Alaska. Bids Nov. 26. CD 12/12, under LB.

▲ Newland Constr. Co., 4302 Hill St., Everett, Wash., CA est. $1,000,000, 3 story, rein.-con. paper WAREHOUSE, EVERETT, WASH. Scott Paper Co., 2600 Blk Federal, Everett, Wash.; J. Graham & Co., 1426 5 Ave., Seattle 1, Wash., engr.

Lease Co., Inc., 1501 N. 35 St., Seattle, Wash., CA Est. $250,000, 35,000 sq. ft. rein.-con. chemicals WAREHOUSE, SEATTLE, WASH. Great Western Chemical Co., 6921 2 Marginal Way, Seattle, Wash.; A. P. Simonson, 11728 Aurora Ave., Seattle, Zone 33, archt.

Valjacal Inc., 10503 E. Los Angeles St., Anaheim, Calif., CA $430,000, 10 stucco multiple DWELLINGS, West Ball Rd., ANAHEIM, CALIF. Robt. Wasserman, 1121 Calle Vista, Beverly Hills, Calif.

E. J. Mackey Co., 720 Howe St., Sacramento, Calif., LB $415,027, 3 bidders, Billy Mitchell SCHOOL, Arden and Eastern Aves., CARMICHAEL, CALIF. Arden-Carmichael Union School Dist., P. O. Box 477, Carmichael, Calif. Bids Dec. 22. CD 12/10.

Bob Long Constr. Co., P. O. Box 1623, Fresno, Calif., CA $601,500, elementary SCHOOL, Sunset and Baker Sts., COALINGA, CALIF. Coalinga-Huron Elem. School Dist., Sunset and Baker Sts., Coalinga, Calif. Bids Dec. 18, awarded Dec. 24. CD 1/2, under LB.

▲ Flowers & Shirley, 2150 Princeton Ave., Los Angeles, Calif., CA $1,179,676, Woodruff Junior HIGH SCHOOL, DOWNEY, CALIF. Downey Union High School Dist., 8521 E. Firestone Blvd., Downey, Calif. Bids Dec. 2, awarded Dec. 29. CD 12/5, under LB.

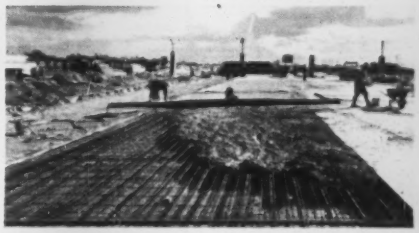
ANOTHER "NAME" HIGHWAY PLAZA WITH STEEL PIPE SNOW MELTING

Through the 22 gates of the new Calumet Skyway Toll Bridge, winter traffic will roll with summertime speed and safety thanks to an automatic *steel pipe* snow and ice melting system in the plaza approaches.

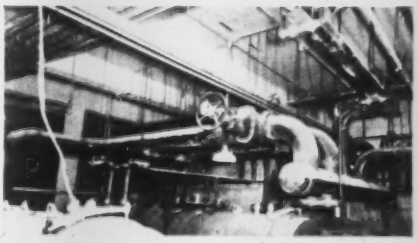
This great highway joins with others, such as the Indiana East-West Toll Road, in melting snow as it falls and preventing accumulation of ice by heating the concrete surfaces with hot anti-freeze circulated through embedded grids or coils of *steel pipe*.

For this growing development in highway construction *steel pipe*'s economy and proved reliability make it the logical material. Also, in all types of building construction, as for vent and drainage lines, fire sprinkler systems, hydronic heating, electrical conduit, structural uses, refrigeration, gas, oil and water lines, *steel pipe* is the most widely used pipe in *the* world.

Write for free booklet "Steel Pipe Snow and Ice Removal Systems."



Embedding a total of 76,192 feet of ¾" and 1¼" steel pipe in plaza approaches.



Boilers under plaza supply heat, through heat exchangers, to the circulating liquid.

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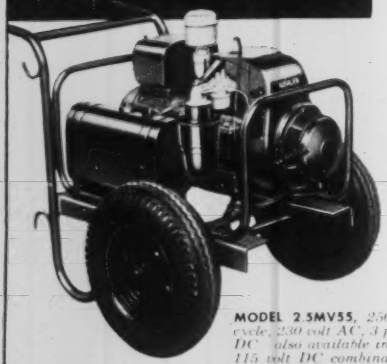

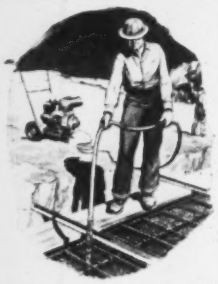

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WATERFORD NEW YORK

Ofcco Co str. Co., 2650 Cherry St., Long Beach, Calif.; LB $150,511 (8 bidders); No. 4 unit steam plant piping equipment, GLENDALE, CALIF., City, 613 E. Broadway, Glendale, Calif.; Bids Dec. 23; CD 12-8.

Newbery Electric Corp., 1038 Venice Blvd., Los Angeles, Calif.; LB $983,787 (10 bidders) electric work, phase 1 medium SECURITY PRISON, State Dpt. Corrections W. O. 3721-GC-19, LOS PADRES, CALIF., State Div. Architecture, 1100 S. Grand Ave., Los Angeles, Calif.; Bids Dec. 23; CD 12-22.

Campbell Constr. Co., P. O. Box 340, Sacramento, Calif.; LB $142,984 (7 bidders) WAREHOUSE addn., Solid Rocket Plant, Spec. 5474 NIMBUS, CALIF., Aerojet-General Corp., Archt.-Engrg. Div., 10687 Folsom, Rancho Cordova, Calif.

Stolte Inc., 8451 San Leandro St., Oakland, Calif.; GA $600,000; 1 story, tunnt., 32,699 sq. ft. rein.-masonry HOSPITAL, OAKLAND, CALIF., Civic Center Hospital Fdn., 1537 Jackson St., Oakland, Calif.; Bids Dec. 1; CD 12-8; under LB.

† Lawrence Constr. Co., P. O. Box 5007, Sacramento, Calif.; LB $130,980 (12 bidders) modify WAREHOUSES for controlled humidity storage, Sacramento Signal Depot, IFB 59-50 SACRAMENTO, CALIF., Dpt. Army, Procurement Office, Sacramento Signal Depot, Sacramento, Calif.

Harvey A. Nichols Co., 926 E. Slauson St., Los Angeles, Calif.; LB $810,300 (6 bidders) general 2 story 66,000 sq. ft. OFFICE addn. for State Div. Hyd. Distr., VIII, SAN BERNARDINO, CALIF., State Dv. Architecture, 1100 S. Grand Ave., Los Angeles, Calif.; Bids Dec. 23; CD 11-24.

Clovis Constr. Co., 521 Brannan St., San Francisco, Calif.; LB $445,300 (6 bidders) HOTEL addns. and alterations, frame, concrete MOTEL, parking area, SAN FRANCISCO, CALIF., Oxford Hotel, c/o Bruce E. Heiser, archt., 251 Post St., San Francisco, Calif.

Sakaguchi Constr. Co., 626 N. 1st St., San Jose, Calif.; LB $484,899 (10 bidders) Abraham Lincoln High SCHOOL addns., SAN JOSE, CALIF., San Jose Unif. School Dist., 408 Almaden Ave., San Jose, Calif.; CD 10-2.

The Pacific Co., 801 Cedar St., Berkeley, Calif.; LB $525,000 (10 bidders) SCHOOL near Beale Air Force Base, WHEATLAND, CALIF., Wheatland Elem. & Union High School Dist., P. O. Box 398, Wheatland, Calif.; Gordon Stafford, 1024½ J St., Sacramento, Calif., archt.

PROPOSED PROJECTS

WATER SUPPLY

▲ Fla., Sarasota—Comrs. Sarasota Co. Courthouse, water and sewer systems to serve 22 sq. mile area south city, $11,000,000. Smalley, Wellford & Nalven and C. K. S. Dodd, Box 2851, consult. engrs.

▲ Miss., Jackson—Pearl River Water Supply Dist., W. P. Bridges, pres., P. O. Box 1193, Jackson, reservoir survey and soil testing, $25,000,000. Harza Engr. Co., Times Bldg., Chicago, Ill., and Lester Engineers, 5141½ E. Amite St., Jackson, Miss., engrs.; CD 12-23.

SEWERS, WASTE DISPOSAL

Fla., Bradenton—City, City Hall, storm sewers, $750,000. Smith & Gillespie, P. O. Box 1048, Jacksonville, consult. engrs. Bids March 1959. CD 12-17-58.

▲ Fla., Palmetto—City Council, City Hall, $1,450,000 bonds voted, improv. to sewerage system and sewage disposal plant, Pollard, Bowen & Watson, 2410 Grand Central Ave., Tampa, consult. engrs.

▲ Ill., Batavia—City, City Hall, sewage disposal facilities, auxiliaries and appurtenances, $1,483,000.

▲ Miss., Jackson—City, City Hall, sanitary sewer sys., $1,200,000. Lester Engineers, 5141½ E. Amite St., Jackson, Miss., engrs.; CD 9-22.

▲ N. C., Concord—City, City Hall, sewage treatment plant and outfall sewers, $2,000,000. J. N. Pease & Co., Inc., 1191½ E. 5th St., Charlotte, consult. engr. Bids in March; CD 1-17-48.

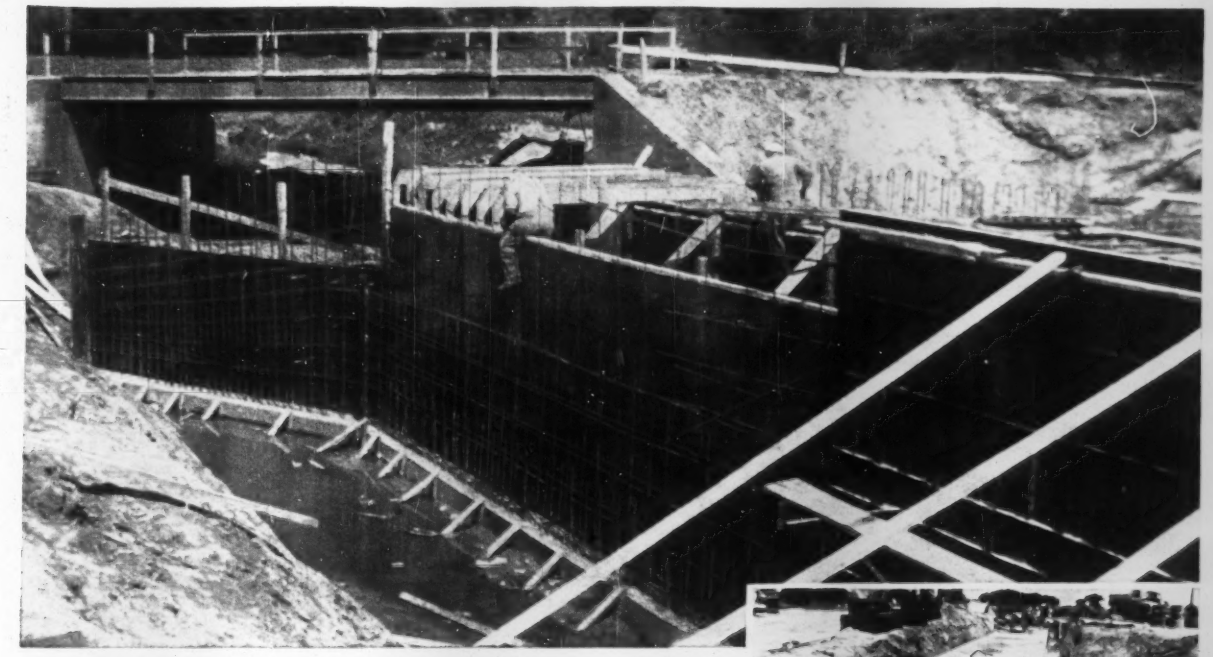
▲ Vt., Bennington—Bd. Selectmen, Town Hall, interceptor and sewage treatment plant, $1,500,000. Charles A. Maguire & Assoc., 14 Court Square, Boston, Mass., consult. engrs. Bids March-April 1959; CD 1-14-59.

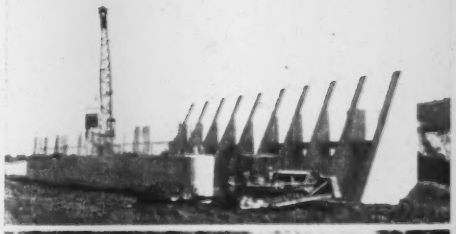
STREETS AND ROADS

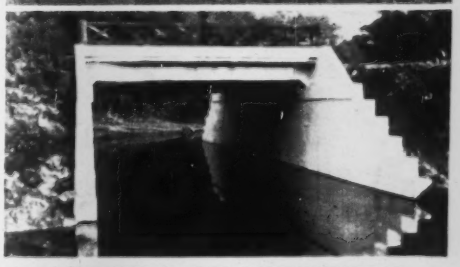
▲ PENNSYLVANIA—Pa. Hwy. Dept., 5th North Office Bldg., Harrisburg.

Dauphin Co.—Interchange and service roads on Rte. 230, to provide better entrance to Olmstead Air Force Base, Middletown, $1,200,000. Yost, Stocker, Jordan & McNeil, Lebanon, and Camp, Hall, consult. engrs.; R. A. Fanes, Harrisburg, engr.

▲ Tex., Dallas—City, City Hall, Paving R.R. expans. and grade separation at Industrial Blvd. & Commerce St. for T. & N.O. RR., $1,077,000. Hedrick & Stanley, 903 Fort Worth Ave., consult. engrs.; street width, Dallas-Westminster Trustees, to Knight and Kimball, subd., E. Lethbetter, Sts., $275,000. Raymond L. Goodson, 2626 Greenville Ave., consult. engr.; Illinois St. improv., from Chalmers Rd. to Fruitdale City limits, $550,000. Koch & Fowler & Wolfe, 901 Cadiz Ave., city, engrs.; CD 12-29.







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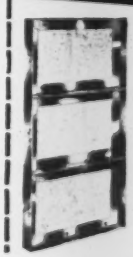

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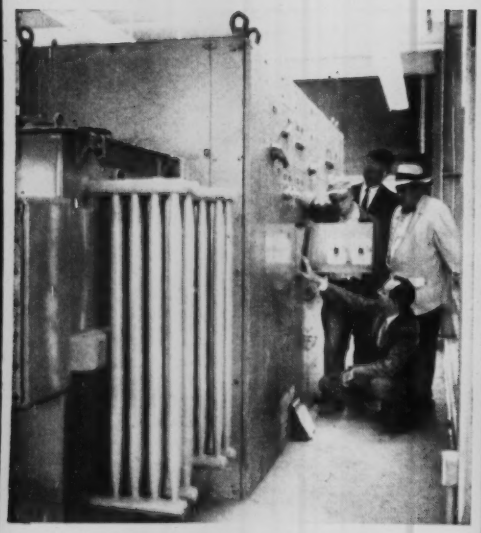
3. UNI-FORM Tie Key

1. Steel framed, plywood faced UNI-FORM Panel

View from pump floor in Oswego, New York, pumping station showing one of main pumps being driven by Westinghouse 300-hp vertical synchronous motor above.



Robert B. Stannard, Resident Engineer for Nussbaumer, Clarke and Velzy, Consulting Engineers; Karr Parker, Jr., Buffalo Electric Co.; Kenneth D. Jensen, Superintendent, Department of Water, Oswego; and M. B. Trimble, Westinghouse Construction Sales Engineer, discuss "tilt-out, lock-out" feature of the control center. Westinghouse double-ended control power center has 300-kva Inerteen® transformer at each end.

Oswego water pumping station Powers-Up to attract new industries

The modernization and expansion program of the Department of Water, Oswego, N. Y., provides an interesting example of building today for tomorrow's needs. While planning for today, Oswego's Water Board recognized that a good water supply is an indispensable commodity in attracting new industry to the area. By Powering-Up electrically, their new pumping station has electrical capacity five times present demand to allow for future growth.

Present demands for water are approximately 10 million gallons per day. Installed pumping capacity is capable of providing more than 20 million gallons per day. In addition, provision has been made to increase capacity to 35 million gallons per day when required by future demands.

The new pumping station is supplied with lake water from an intake tunnel which extends through solid rock for a distance of 6250 feet into Lake Ontario. This tunnel intake averages eight feet in diameter and is capable of conveying 128 million gallons of water per day.

Electrical power for the station is available from two separate sources—one direct from the Oswego Steam Station and the other from the Niagara-Mohawk Varick Station. The complete electric distribution system, as furnished by Westinghouse, provides for all anticipated future expansion of the pumping station.

Powering-Up electrically for future growth can offer important advantages to you. For further information, call the Westinghouse electrical engineer nearest you, or write Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania.

J-94119

Owner: Department of Water, Oswego, N. Y.
Consulting Engineers:
Nussbaumer, Clarke and Velzy
General Contractor: McElwee-Courbis Const. Co.
Electrical Subcontractor: Snyder and Mackin, Inc.
Westinghouse Distributor: Buffalo Electric Co., Inc.

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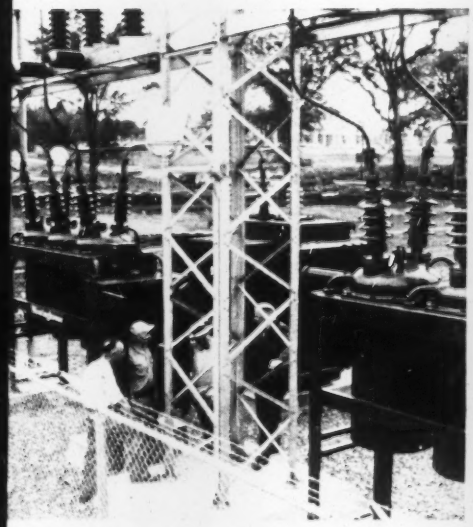
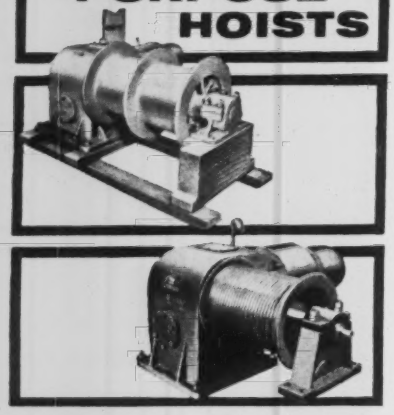


Leo J. Landrigan, Superintendent, Oswego Pumping Station; Richard C. Mansfield, Foreman for Snyder and Mackin, Electrical Contractors; Kenneth D. Jensen; and Charles T. Hansen, Westinghouse Sales Engineer, at outdoor substation which serves new Oswego pumping facility. Two Westinghouse 2000-kva power transformers and two Westinghouse 34.5-kv oil circuit breakers are included in this substation.

Main floor view in pumping station shows four Westinghouse vertical synchronous pump motors with the glass enclosed control room in background. The mezzanine floor above is occupied by Westinghouse 2300-v, heavy-duty, metal-clad switchgear, using Type DH air circuit breakers.

Another view of main floor shows reverse side of control room and, on the mezzanine, Westinghouse double-ended control power center. Floor openings in foreground, not shown, have been provided for the installation of four additional raw water pumping units when filter plant is added.

SPECIAL PURPOSE HOISTS



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EARTHWORK, WATERWAYS

Calif., Mill Valley—City, City Hall, harbor dredging, part of Richardson Bay Proj. $300,000.

AIRPORTS

▲ Miss., Jackson—AIRPORT—Airport Comn., plans by Overstreet, Ware & Ware, 414 S. State St., Jackson, Miss., and John L. Turner, 1224 N. West St., Jackson, Miss., municipal airport, Rankin Co. $6,000,000. E. B. Cavallo & Assocs., Barnett Bldg., Jackson, Miss., and Michael Baker, Jr., Inc., 3957 Northview Dr., Jackson, Miss., engrs. CD 9/22.

PUBLIC BUILDINGS

Calif., Carmichael—SCHOOL—Arden-Carmichael School Dist., Sutter and California Sts., plans by Cox & Liske, Whitson W. Cox, 800-10th St., Sacramento, 1 story, 30,000 sq. ft. Sierra Oaks Elementary School, Mills Dr. $450,000. CD 2/4.

Calif., North Sacramento—CITY HALL—City, City Hall, plans by Grant Caywood, 1435 Alhambra Blvd., Sacramento, 3 story, 25,400 sq. ft. concrete, steel City Hall. $600,000.

▲ Colo., Alamosa—DORMITORIES—State Planning Div., State Office Bldg., Denver, plans by Joseph T. Wilson, Masonic Bldg., girls' dormitory and boys' dormitory, Adams State College. $1,160,000. CD 11/20.

▲ Colo., Buena Vista—REFORMATORY—Colorado State Reformatory, State Planning Div., State Office, Denver, state reformatory expansion. $2,000,000. CD 9/29/55.

▲† Colo., Denver—NUCLEAR POWER—Dpt. Air Force, Wash., D. C., will not construct nuclear power project for aircraft engines at Rocky Mountain Arsenal. $22,500,000. Project abandoned. CD 12/2.

Conn., Woodbridge—SCHOOL—Town, Town Hall, plans by Davis, Cochran & Miller, 29 Whitney Ave., New Haven, 1 story elementary school, Beecher Road. $750,000. Hubbard, Lawless & Blakeley, 110 Whitney Ave., New Haven, consult. engr. CD 6/18.

Ill., Lockport—SCHOOL—Ludwig School Dist. 92, N. State St., plans by Wm. J. Connor & Assocs., 164 E. 154 St., Harvey, Reed Grade School, $542,000.

▲ Miss., Biloxi—SCHOOL—Biloxi School Bd., voted $1,600,000 bonds Dec. 9, high school on site west of Michel Junior High School.

▲ Ill., Springfield—STATE CENTENNIAL—State Dpt. P. Wks., State Capitol, State Centennial bldg. addn. $6,000,000. Constr. 1961. CD 3/24/44.

▲ Minn., Richfield (P.O. Minneapolis)—SCHOOL—Bd. Educ., Independent School Dist. No. 280, plans by Thorshov & Cerny, 400 Metropolitan Bldg., Minneapolis, Minn., Junior High School, 73½ 75th Sts., Logan and Oliver Aves. South. $1,200,000. Constr. 1959. CD 3/8/56.

Mont., Great Falls—SCHOOLS—School Bd., three grade schools, $607,227 each and fourth school, $683,057.

Mont., Twin Bridges—EMPLOYEES HOUSING—State Orphans Home, employees housing. $525,459.

▲ N. J., Dover—HOSPITAL—Dover General Hospital, Jardine Rd., plans by Edward Berg, 235 Riverside Dr., Denville, hospital addn. $2,000,000. Bids in Jan. or Feb. CD 10/23/57.

▲ Pa., Phila.—SCHOOL—Bd. Educ., 21st St. and Parkway, plans by Wallace & Warner, Lancaster and Martin Aves., Bryn Mawr, elementary school, Knights Rd. $1,600,000. Schultz & Padlasky, 1430 Spruce St., consult. engrs.

▲ Tex., Houston—HOSPITAL—Bd. for Texas State Hospitals & Special Schools, 4405 Lamar Blvd., plans by Geo. & Abel Pierce, 2200 Welch Ave., research hospital on mental illnesses. $1,500,000. Bernard Johnson & Assocs., 4926 Travis St. and Walter P. Moore, 2 Pinedale St., consult. engrs. CD 7/28.

Wash., Seattle—HOUSING—King Co. Housing Auth., Lowman Bldg., Seattle, Zone 4, 50 units housing. $500,000.

▲ Wyo., Laramie—POWER PLANT, etc.—University of Wyoming Campus, power plant, $1,500,000; 252 unit, married students apartment, garage, warehouse unit, $344,000; commerce and industry bldg., student health center, $344,000.

▲ Ont., Dundas—SCHOOL—Bd. Educ., plans by Kyles and Kyles, 247 John St. S., Hamilton, 2 story, high school. $1,000,000.

COMMERCIAL BUILDINGS

Calif., Felton—Safeway Stores, Constr. Dept. 15, Ocean Ave., San Francisco, Safeway Store, $350,000.

▲ Calif., LaJolla—HOME—Southern California Presbyterian Homes, 1501 Wilshire Blvd., Los Angeles, plans by Orr Strange & Inslee, Claude Senefeld Assoc., 3142 Wilshire Blvd., Los Angeles, Calif., Home addn. for retired. $1,250,000.

▲ Calif., Long Beach—OFFICE—Southern California Edison Co., 601 W. 5th St., Los Angeles, plans by Kenneth S. Wing, 30 Linden Ave., Long Beach, Calif., 10 story office bldg., First & American Ave. $4,000,000.

▲ Calif., Sacramento—APARTMENT—James Scheuer, City & Suburban Homes, 130 E. 59th St., New York, N. Y., 680 apartment unit development, 5th, 7th N & P Sts. $9,000,000.

Calif., San Rafael—APARTMENT, etc.—Custom Builders, 47 Louise St., 50 unit apartment, swimming pool and boating facilities, Canal St. $500,000.

Colo., Salida—HOSPITAL—Denver & Rio Grande Western Railroad Employees Assocs., 40 bed brick hospital wing addn., $800,000.

▲ Conn., Hartford—HOSPITAL—St. Francis Hospital, 114 Woodland St., educational and research hospital adds. $4,000,000.

▲ Okla., Oklahoma City—HALL—National Cowboy Hall of Fame c/o Begrow & Brown, architects, 28 Maywood St., Birmingham, Mich., 1 story, 480 x 520 ft. reinf. conc. copper roof, brick, hall, $5,000,000. Sorey, Hill and Sorey, 809 NW 36 St., assocs. archts.

▲ Okla., Tulsa—APARTMENT—2300 Riverside c/o Raymond D. Nasher, National Bank Bldg., Dallas, Tex. plans by George F. Harrell and C. G. Hamilton, Republic National Bank Bldg., Dallas, Tex., 21 story apartment incl. swimming pool underground garage Riverside Dr. and Woodward Ave., $5,000,000. CD 3/14.

▲ Okla., Tulsa—LIBRARY-SCIENCE, etc.—Benedictine Heights College, 2120 E. 21 St., plans by Koberling, Slattery & Slattery, 569 S. Peoria St., library-science classrooms, $1,500,000; girls' dormitory, $1,200,000. CD 12/5.

▲ Tex., Fort Worth—DEPARTMENT STORE, etc.—Sears Roebuck & Co., 925 S. Homan St., Chicago, Ill., 500,000 sq. ft. department store, south side of Katy Lake, $5,000,000, area and hard-paving auto center, $200,000.

▲ Tex., Houston—APARTMENT, etc.—S. N. Adams, Builder Developer, 4000 Westheimer Rd., 150 unit apartment, $1,500,000; shopping center, 4100 San Felipe Rd., $1,750,000. CD 1/9/56.

▲ Tex., Pasadena—SHOPPING CENTER, etc.—J. C. & I. C. Epps, Center, Inc., 1605 Driscoll St., Houston, Tex., plans by White & Emberg, 2017 S. Shepherd Dr., Houston, Tex., 85,000 sq. ft. shopping center, $1,000,000; hard paving shopping center and auto center, $80,000; earth site development incl. grading, filling leveling, etc. $45,000, Pasadena Blvd. and Strawberry Rd.

▲ Vt., Burlington—LIBRARY—University of Vermont, 85 S. Prospect St., plans by Freeman, French & Freeman, 158 Bank St., library, East Campus. $2,000,000. constr. 1959.

▲ Wash., Spokane—HOME—Dominican Sisters, Kettle Falls, Plans by J. W. Maloney, Central Bldg., Seattle, Zone 4, home for chronically ill. $1,145,000. CD 11/25.

▲ Alta., Calgary—SHOPPING CENTER—Farmers & Merchants Trust Co. Ltd., 345-7th Ave. S.W., plans by A. Dale & Assocs., 1026 16th Ave., N.W. 70,000 sq. ft. 30 store shopping center, Glamorgan Centre, Richmond Rd. and 37 St. S.W., $1,500,000. CD 8/7.

▲ Que., Chicoutimi—HOUSES—Hilaire, Vincent & Lionel Brassard, 540 Brassard St., with J. B. Maltais Inc., 284 Ste. Anne St., 200 houses, Park Falaise, $2,000,000.

INDUSTRIAL BUILDINGS

▲ Del., Wilmington—PLANT—Bestwall Gypsum Co., Ardmore, Pa., gypsum board plant at Marine Terminal. $6,000,000.

▲ Ill., Glenview—FACTORY—Tempel Mfg. Co., 1939 Bryn Mawr Ave., Chicago, plans by Shaw, Metz & Dolio, 208 S. LaSalle St., Chicago, Zone 4, 937,500 sq. ft. stainless steel, glass electronics factory and research bldg., Tri-State toll road and Milwaukee Ave. $10,000,000.

▲ N. Y., New York—PARKING GARAGE—U. S. Parking Corp., 120 Broadway, New York, Zone 5, 10 story parking garage, east side Whitehall St. from Bridge to Stone Sts. $2,000,000.

▲ N. C., Henderson—PLANT—Laurens Glass Works, Laurens, S. C., glass container mfg. plant. Over $2,000,000.

▲ Tex., Houston—PLANT—Metallic Bldg. Co., 4601 Holmes Rd. (Stran-Steel, Div. of National Steel Corp.) 250,000 sq. ft. plant addn. $2,000,000.

Tex., Weslaco—PLANT—Continental Can Co., 105 N. Greenwood St., Houston, mfg. plant, east city limits, $1,000,000.

▲ Utah, Salt Lake City—PLANT—Flintoke Co. (United States Lime Div.), 4111 RCA Bldg., New York 20, N. Y. lime plant over $1,000,000.

▲ Wyo., Glenrock—STEAM POWER PLANT, etc.—Pacific Power & Light Co., Albany, Ore., 100,000 kw addn. to Dave Johnston Steam Power Plant and transmission lines $18,000,000. To go ahead early Spring.

▲ Que., Three Rivers—PLANT—Canadian International Paper Co., 508 Commissaires St., install high yield sulphite pulping plant. $1,300,000.

UNCLASSIFIED

Calif., Santa Rosa—HARBOR—Sonoma County, Courthouse, Santa Rosa, harbor, Bodega Bay. $500,000. Frank Sarles, 425-S. E. St., consult. engr.

Fla., Green Cove Springs—GAS DISTR. SYS.—City, City Hall, natural gas distr. sys. $625,000. Reynolds, Smith & Hills, 227 Park St., Jacksonville, consult. engrs.

NEW AIR-COOLED DIESEL ENGINES

now available through

HERCULES

THE JLO* SERIES

(pronounced "ee-lo")

Distributed in the United States by Hercules Motors Corp.

*Reg. TM of Jlo-Werke, G.m.b.H., Pinneberg, Germany

Check these outstanding features:

- **SIMPLICITY:** Jlo Series diesel engines are of 2-cycle design: eliminate valves, tappets, push-rods and camshaft for dependable, maintenance-free operation in their horsepower range.
- **LIGHTWEIGHT:** 2-cycle simplicity and judicious use of aluminum in construction reduce the weight of Jlo Series diesel engines to less than 15 pounds per horsepower!
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- **PERFORMANCE-PROVED:** Jlo Series air-cooled diesel engines have been used in every climate for every service in their power range. Fast-starting and rugged, they are ideal for both "stand-by" and continuous-duty operation.

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Please send me more information on JLO Series air-cooled diesels and the name of my Hercules distributor.

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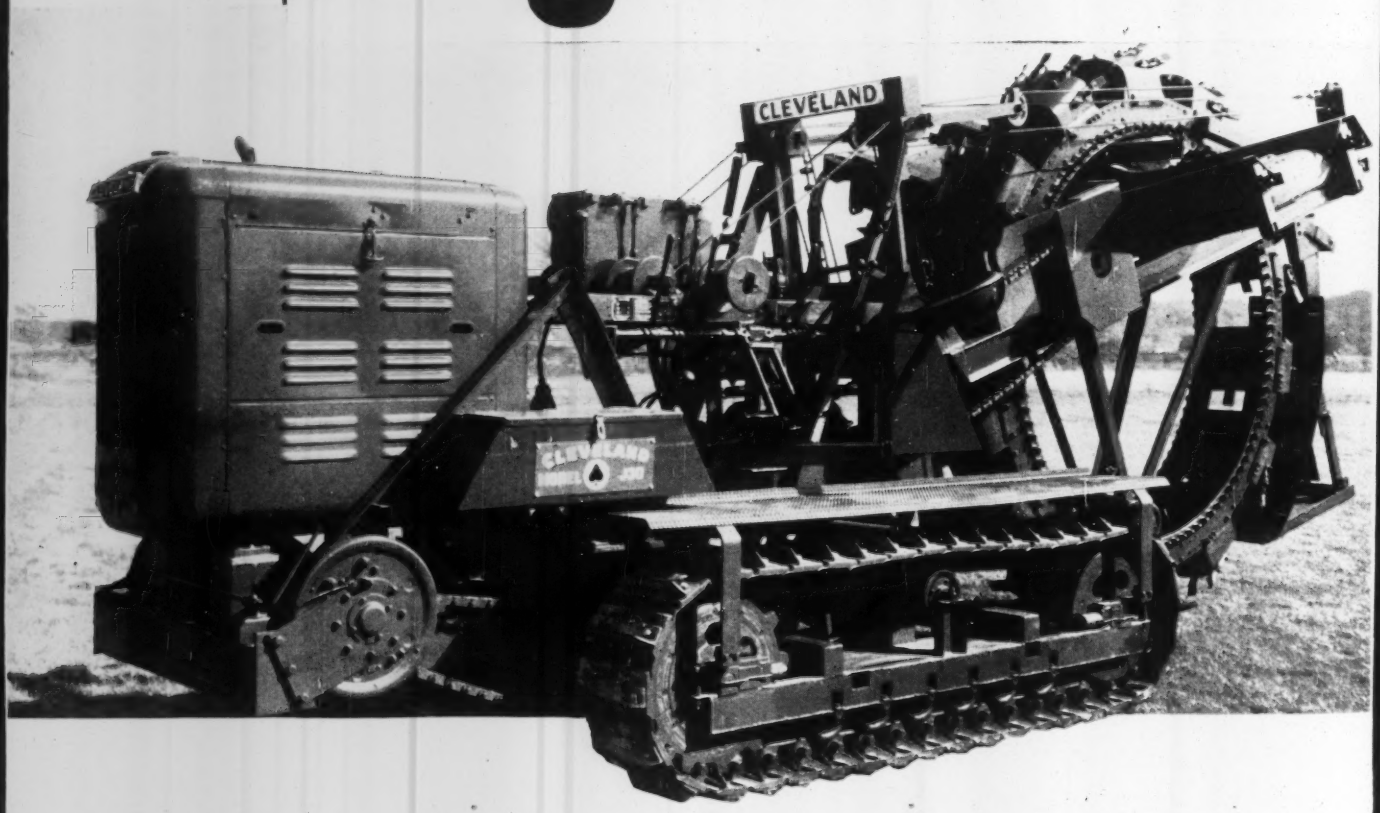
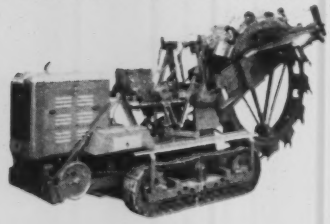
3 GREAT NEW



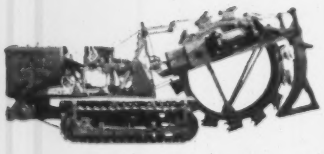
The J-20

Width over crawlers ..... 4' 10"
Crawler length, C.C. ..... 6' 3"
Overall length ..... 21' 6"
Width of crawler shoe ..... 10"
Weight ..... approx. 13,500 lbs.
Ground bearing pressure ..... 8.8 psi.
Cuts trench 13" to 24" wide, to 5' 6" deep
Principal applications:
urban areas, utilities lines, services, extensions, mains, house footings, etc.



The J-30

Width over crawlers ..... 6'
Crawler length, C.C. ..... 6' 9"
Overall length ..... 22'
Width of crawler shoe ..... 14"
Weight ..... approx. 15,000 lbs.
Ground bearing pressure ..... 6.5 psi.
Cuts trench 13" to 24" wide, to 5' 6" deep
Principal applications:
suburban areas, drainage, utilities, gathering lines, footings, septic tanks, leach beds.



The J-40

Width over crawlers ..... 8'
Crawler length, C.C. ..... 7' 6"
Overall length ..... 23'
Width of crawler shoe ..... 18"
Weight ..... approx. 18,800 lbs.
Ground bearing pressure ..... 5.6 psi.
Cuts trench 17½" to 30" wide, to 5' 6" deep
Principal applications: trench up to 30" wide — pipelines, waterlines, drainage, irrigation, sewer lines, utilities.

...with the basic Cleveland characteristic... *Quality*

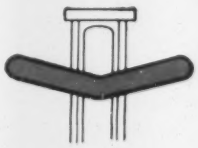
CLEVELAND TRENCHERS

with ...revolutionary new V conveyor

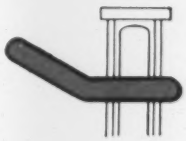
...world's finest trencher crawlers

...all operations controlled at operator's seat

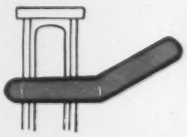
V CONVEYOR ... provides maximum clearance under digging wheel rims ...allows higher heaped loads without clogging ... provides constant elevating angle for faster, higher spoil discharge ... reduces rolling and tumbling ... has stronger torsion-free construction ... employs huskier, longer-lived bearings.

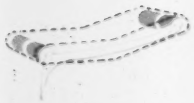


AUTOMATIC CONVEYOR SHIFT ... operator controls hydraulic shifting and positioning of conveyor ... digs past poles, trees, shrubs ... places spoil where needed ... *all* without leaving seat, without interrupting other operations.

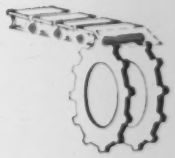


DUAL INDEPENDENT CONVEYOR DRIVE ... identical, self-contained hydraulic motor and planetary gear drives in each head-pulley eliminate *all* conveyor chains and sprockets ... reduce belt slippage and wear ... furnish operator fingertip control of conveyor belt direction and speed (215-1,000 fpm) independent of all other operations.





FINEST CRAWLERS ON ANY TRENCHER ... employ double flanged wheels, rollers and sprockets with wide-spaced teeth ... drives on each end of 1½" dia. hardened pins ... completely eliminates pockets for dirt, stones, etc. ... eliminates take-up devices ... gives greater track stability ... lengthens wear life ... sprockets, wheels and idlers ride on sealed ball or roller bearings requiring only 200-hour lubrication ... a tremendously long-lived, trouble-free, easy-rolling crawler track.



BIG 16"x3" HYDRAULIC STEERING BRAKES ... controlled by suspended-type foot-pedals ... provide simple easy steering and maneuvering.

HYDRAULIC CRUMBING SHOE ... now, crumbing shoe advantages (cleaning, grading) are practical even in crowded digging ... Cleveland's hydraulic shoe control (optional, extra) pivots shoe back and up to allow setting wheel to required depth at walks, drives, underground obstructions, etc.

Engine, Hoist, Wheel, Shoe, Conveyor Speed—Direction—Shift, Crawlers

...Every Operation Controlled at Operator's Seat.

Good *Everywhere*

The CLEVELAND TRENCHER Co.

Pioneers of the Modern Trencher

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Cleveland 17, Ohio

Bids—Low Bids—Contracts—Second Section

NEW ENGLAND

BUILDINGS—BA

▲ Conn., Trumbull—HOME FOR AGED—BA 1/20—Diocese of Bridgeport, Chancery Office, 359 Washington Ave., Bridgeport, home for aged, St. Joseph's Manor, Hubbel Property, $1,100,000. J. Gerald Phelan, 211 State St., Bridgeport, archt. Fletcher-Thompson, Inc., 211 State St., Bridgeport, engr. CD 2/26.

HEAVY CONSTRUCTION—LB & CA

▲ NEW HAMPSHIRE—Dpt. P. Wks. & Hys., Concord, bids opened 12/31:
Munroe-Langstroth Inc., 1390 Providence Tpke., Norwood, Mass., LB $1,428,050 (11 bidders), 923 ft. 7 span welded plate girder bridge over Merrimack River, Bedford-Manchester area, Hillsboro Co. CD 12/16.

BUILDINGS—LB & CA

▲ Gilbane Bldg. Co., 90 Calverly St., Providence, R. I. BA $1,355,000, est. $1,000,000. Proj. RI-18 phase 2, HOSPITAL, addns. and alterations, Toll Gate Rd., WARWICK, R. I., Kent Co. Memorial Hospital, 455 Toll Gate Rd., Warwick, R. I. Bids Oct. 28. CD 10/30, under LB.

▲ Gellatly Constr. Co., 181 Sylvan Ave., Bridgeport, Conn., CA $1,170,500. SCIENCE bldg., chemistry, physics and biology laboratory, lecture hall, BRIDGEPORT, CONN., University of Bridgeport, Park Place, Bridgeport, Conn. Bids Dec. 24, awarded Dec. 30. CD 12/31, under LB.

▲ High Park Co., New Haven, Conn., owner, builds $1,790,000, 174 HOUSES, "Cheshire View," SOUTH MERIDEN, CONN.

▲ Ippolito-Lutz, 122 Selleck St., Stamford, Conn., CA $2,423,000, 2 story garden APARTMENTS, 29 buildings, 206 dwellings, Proj. MR-58, STAMFORD, CONN., Stamford Housing Auth., 100 Myano Lane, Stamford, Conn. Bids Dec. 2. CD 12/8, under LB.

MIDDLE ATLANTIC

HEAVY CONSTRUCTION—BA

▲ New York and New Jersey—BA 2/1—Port of New York Authority, 111 Eighth Ave., New York. Zone 1. "Conte. GWB 190.005, Sections 4 and 6 of approach roadway sys., New York for lower level expansion, George Washington Bridge." Plans deposit $50. CD 8/15.

▲ N. Y., Idlewild—RUNWAY V APPROACH LIGHT PIER—BA 1/20—Port of New York Auth., 111 Eighth Ave., New York., Zone 11. Contr. NYA 920.009, approach light pier for Runway V, New York International Airport. Plans deposit $40. Extended date. CD 12/4.

HEAVY CONSTRUCTION—LB & CA

▲ Graziano Constr. Co., 7321 Franktown Ave., Pittsburgh, Pa., CA $1,036,802, north and south Ventilation bldgs., garage and maintenance bldgs. for Fort Pitt Tunnel, Pittsburgh, Allegheny Co., PENNSYLVANIA Pa. Hys. Dpt., 506 North Office Bldg., Harrisburg, Pa. Bids Dec. 5. Awarded Jan. 6. CD 12/10, under LB.

▲ Curro Constr. Co., Union Commercial Bldg., Cleveland, O., LB $814,500. Contr. 4 interceptor sewers and sewer extens., BRADFORD, PA., Bradford Sanitary Auth., Bradford, Pa. Bids Dec. 22. CD 12/1.
Wingate Constr. Co., 14 S. 17th St., Phila., Pa., LB $1,281,725. Contr. 5 general constr., sewage treatment and refuse disposal plant, (Bradford, Pa.):
Hull Electric Co., Bradford, Pa., LB $121,977. Contr. 8, electrical work, (Bradford, Pa.)

▲ Matan Constr. Co., 2 Park Ave., New York, N. Y., LB $3,518,000. (7 bidders). 1st phase, Potomac River Water Development Contr. 2004-W, (Stage 1) constr., intake structure, raw water pumping station, finished water reservoir, pumping station, etc., Watts Branch, HYATTSVILLE, MD., Washington Suburban Sanitary Comm., Hamilton St., Hyattsville, Md. Bids Jan. 7. CD 12/15.

▲† Norair Engineering Corp., 1118 22 St., N.W., Wash., D. C., CA $1,468,000. AIR CONDITIONING, South Bldg., Dpt. of Agriculture, WASH., D. C., General Services Admin., General Services Bldg., Wash., D. C. Bids Dec. 23. CD 12/30, under LB.

BUILDINGS—LB & CA

▲ Fleming Co., Wynnewood, Pa., CA $2,000,000. HOTEL and drive-in BANK, RADNOR, PA., Radnor Shopping Center, c/o Matthew B. Weinstein, Chetwynd Apts., Rosemont, Pa., Frederick Wise, c/o owner, archt.-engr. CD 4/24.

▲ Victor Beauchamp Inc., 431 Cedar St., N.W., Wash., D. C., LB $2,000,000 (7 bidders). 8 story OFFICE, 1700 Block Massachusetts Ave., N.W., WASH., D. C., Brookings Institute, 722 Jackson Place N.W., Wash., D. C. Bids Dec. 23. CD 11/21.

▲ Wark & Co., 1920 Sansom St., Phila., Pa., CA $1,000,000. MANUFACTURING bldg., PHILA., PA., Keebler Biscuit Co., G. St. and Hunting Park Ave., Phila., Pa. Bids Dec. 2. CD 12/24, under LB.

▲ Howard D. King, 126 E. Athens Ave., Ardmore, Pa. Separate Contracts $1,000,000. 50 RESIDENTIAL DEVELOPMENT, Pasadena Park, Johnson Rd., etc., PLYMOUTH MEETING, PA.

▲ Costanza Constr. Co., 3001 Vineyard Ave., Baltimore 18, Md., CA $1,937,000, 1 story, brick, concrete, steel block Franklin SENIOR HIGH SCHOOL, Reisterstown, TOWSON, MD., Baltimore Co. Bd. Educ., Aigburth Rd., Towson 4, Md. Bids Dec. 16. CD 12/19, under LB.

▲ M. W. Kellogg Co., 711 3 Ave., New York, N. Y., CA $11,000,000, design and construct urea PLANT, CLAYMONT, DEL., SunOlin Chemical Co. (Sun Oil Co. and Olin Mathieson Chemical Co.), 1608 Walnut St., Phila. 3, Pa. CD 12/30.

SOUTH

HEAVY CONSTRUCTION—BA

▲ Fla., Miami—BA 3/4—City Comrs., City Hall, incinerator incl. bldg. equipment paving and landscaping, Coconut Grove Sect., $1,000,000. Fay, Spofford & Thorndike Inc., 11 Beacon St., Boston, Mass., and Alexis P. Kononoff, 620 NW 32 St., engrs., CD 10/10.

BUILDINGS—BA

▲† Va., Fort Lee—ACADEMIC BLDG.—BA on or about 2/12—U. S. Eng., Foot of Front St., Norfolk 1, 2 story and bsmnt., composite steel and concrete, with brick faced concrete masonry block curtain walls, etc., Quartermaster Academic Bldg., utilities, grading, paving, ENG-44-110-59-17, $2,300,000. CD 9/8.

HEAVY CONSTRUCTION—LB & CA

▲† P. G. Bell & Co., Inc., Box 13196, Houston, Tex., LB $1,344,924. DORMITORIES and fire station, Air Force Missile Test Center, Patrick Air Force Base, ENG-08-123-59-31, COCOA, FLA., U. S. Eng., Box 4970, Jacksonville, Fla. Lyles, Bissett, Carlisle & Wolff, 1321 Bull St., Columbia, S. C., engrs.-archts. Bids Dec. 31. CD 12/4.

▲ Sullivan, Long & Hagerty, 801 S. St., N. Birmingham, Ala., CA $1,328,704, water treatment plant, lines, sewage treatment plant, lines, street paving, SARASOTA, FLA., City, City Hall, Sarasota, Fla. Bids Dec. 16. CD 11/5, under Sew.

▲ Sherman & Hemstreet, 801 Broad St., Augusta, Ga., separate contract, $3,500,000, 200 RESIDENCES, Greenbriar Subdivision, AUGUSTA, GA., George E. Perkins, 734 Oxford Rd., Augusta, Ga., archt. CD 8/1.

▲ Fred Howland, Inc., 1415 NW 20 St., Miami, Fla., CA $1,550,000, AIRPORT HOTEL, Miami, International Airport, MIAMI, FLA., Airway Hotel, Inc., c/o Steward-Skinner Assocs., archts., DuPont Plaza Center, Miami, Fla. Bids Dec. 9. CD 12/23 under LB.

MIDDLE WEST

HEAVY CONSTRUCTION—BA

▲ Ill., Waukegan—BA 3/2—Water Dpt., 106 N. Utica St., WW imprvs., 4 mg. Northwest Side storage tank, distribution main addn., $1,800,000. Henry B. Bleck & Assoc., 9 S. County St., consult. engr. CD 8/5.

BUILDINGS—BA

▲ Ill., Glenview—LABORATORY—Bids Asked: National Dairy Products Corp., 923 Waukegan Rd., part 1 and 2 story, 100,000 sq. ft. rein.-conc., brick laboratory and research bldg., Waukegan Rd., $3,000,000. Childs & Smith, 20 N. Wacker Dr., Chicago, Zone 6, archts. CD 9/2.

HEAVY CONSTRUCTION—LB & CA

▲† Jennings & Churella, New London, O., CA $1,500,000, Air Route Traffic Control Center (lease), OBERLIN, O., General Services Admin., 219 S. Clark St., Chicago, Ill. Bids Oct. 12. CD 11/7, under LB.

▲ Herlihy Mid-Continent Co., 407 S. Dearborn St., Chicago, Ill., LB $1,781,214, Milwaukee Ave. overpass bridge, Augusta Blvd. Ramp Bridge, Northwest Rte. Superhighway, CHICAGO, ILL., Dpt. of Purchases, City of Chicago, City Hall, Chicago 2, Ill. Bids Dec. 30. CD 12/5.

BUILDINGS—LB & CA

▲† Gust Newberg Constr. Co., 2040 N. Ashland Ave., Chicago 14, Ill., CA $21,737,000, 1,000 bed VETERANS HOSPITAL, BRECKSVILLE, O., Veterans Admin., Munitions Bldg., Wash., D. C. CD 11/6, under LB.

▲ Gust K. Newberg Construction Co., 2040 N. Ashland Ave., Chicago, Ill., CA $12,347,000, 350 x 1,100 ft. EXPOSITION BLDG., CHICAGO, ILL., Metropolitan Fair & Exposition, 208 S. LaSalle St., Chicago 4, Ill. CD 12/16, under LB.

WEST OF MISSISSIPPI

HEAVY CONSTRUCTION—BA

▲ Texas—BA 2/4—Sabine River Auth. of Texas, Box 195, Greenville, reservoir clearing for Iron Bridge Dam Proj., Sched. 1, SW ¼ of reservoir and Sched. 2, near Wiess Point, $1,000,000. Forrest & Cotton, 600 Vaughn Bldg., Dallas, engrs. CD 3/26/56.

BUILDINGS—BA

▲ Wyo., Cheyenne—BANK-OFFICE—BA 1/21—American National Bank, 1602 Capitol Ave., 5 story, rein.-con. bank-office bldg., $1,500,000. Bank Building & Equipment Co., 1130 Hampton St., St. Louis, Mo., archt. CD 11/14.

▲ Kan., Lawrence—STUDENT UNION BLDG.—BA 1/27—Bd. Regents, University of Kansas, Topeka, 56 x 91 ft. student union bldg. addn., $1,000,000. Mann & Co., 210 E. First St., Hutchinson, Kan., archts. CD 5/27.

▲† Kan., Topeka—HOUSING—BA 2/12—Topeka Air Force Depot, Topeka Air Force Station, 414 units Capehart housing, Forbes Air Force Base (Section 2), Williamson, Lobscack & Assoc., 2015 Gage, Topeka, Kan., archts. CD 11/7.

HEAVY CONSTRUCTION—LB & CA

▲† Hood Constr. Co., Cherf Bros. and Sandkay Contractors, Inc., 6201 S. Sorenson Ave., Whittier, Calif., CA $2,235,121. 18 in. water line, 24 mi. long, with 5 pumphouses to bring water from Missouri River to Glasgow Air Force Base, ENG-45-167-59-10, GLASGOW, MONT., U. S. Eng., City-County Airport, Walla Walla, Wash. Bids Dec. 18, awarded Jan. 2. CD 12/22, under LB.

BUILDINGS—LB & CA

▲ Fluor Corp. Ltd., (Mid-Continent Div.), 3137 Old Spanish Trail, Houston, Tex., CA est. $3,000,000, (Design and Construct), expan. GAS PROCESSING PLANT near here, BISHOP, TEX., Champlin Oil & Refining Co., 5301 Camp Bowie Blvd., Fort Worth, Tex. CD 11/14.

▲† Carpenter Bros., Constr. Co., 9314 W. Jefferson, Dallas, Tex., CA $1,172,000, multi-purpose FEDERAL bldg., HOT SPRINGS, ARK., General Services Admin., Hot Springs, Ark. Bids Dec. 2. CD 12/12, under LB.

FAR WEST

HEAVY CONSTRUCTION—BA

▲ Alaska, Anchorage—HYDRO PROJECT—BA 1/20—Chugach Electric Assocs., fabrication and delivery substation material and equipment, Cooper Lake Hydro Project, North Pacific Consultants, consult. engrs. CD 5/28.

BUILDINGS—BA

▲† N. M., Los Alamos—LABORATORY AND OFFICE—BA 1/29—U. S. Atomic Energy Comm., Los Alamos area office, Chief Contracts Sect., Power Reactor Test laboratory and office, Inv. No. 291-59-4, $1,000,000-$1,300,000. CD 11/20.

HEAVY CONSTRUCTION—LB & CA

▲ CALIFORNIA—State Div. Hys., 1120 N. St., Sacramento:
Griffith Co., 1060 S. Broadway, Los Angeles, Calif., CA $5,465,760, grading, paving to constr. 11.9 mi., 4 lane expressway U. S. Hy. 466 on new alignment between Tower Line Rd. and Bear Mountain Ranch incl. bridges and grade separation, VI-Ker-58-D, E, Kern Co. Bids Dec. 4, awarded Dec. 31. CD 12/5, under LB.

▲† Wells-Benz Inc., 1357-7th Ave., San Diego, Calif., LB $4,648,015. (16 bidders). Launch Complex No. 1, Naval Missile Facility, Point Arguello, Spec. 19453-58, POINT MUGU, CALIF. Dist. P. Wks. Office, Eleventh Naval Dist., 1220 Pacific Hy., San Diego, Calif. Bids Dec. 30. CD 12/22.

BUILDINGS—LB & CA

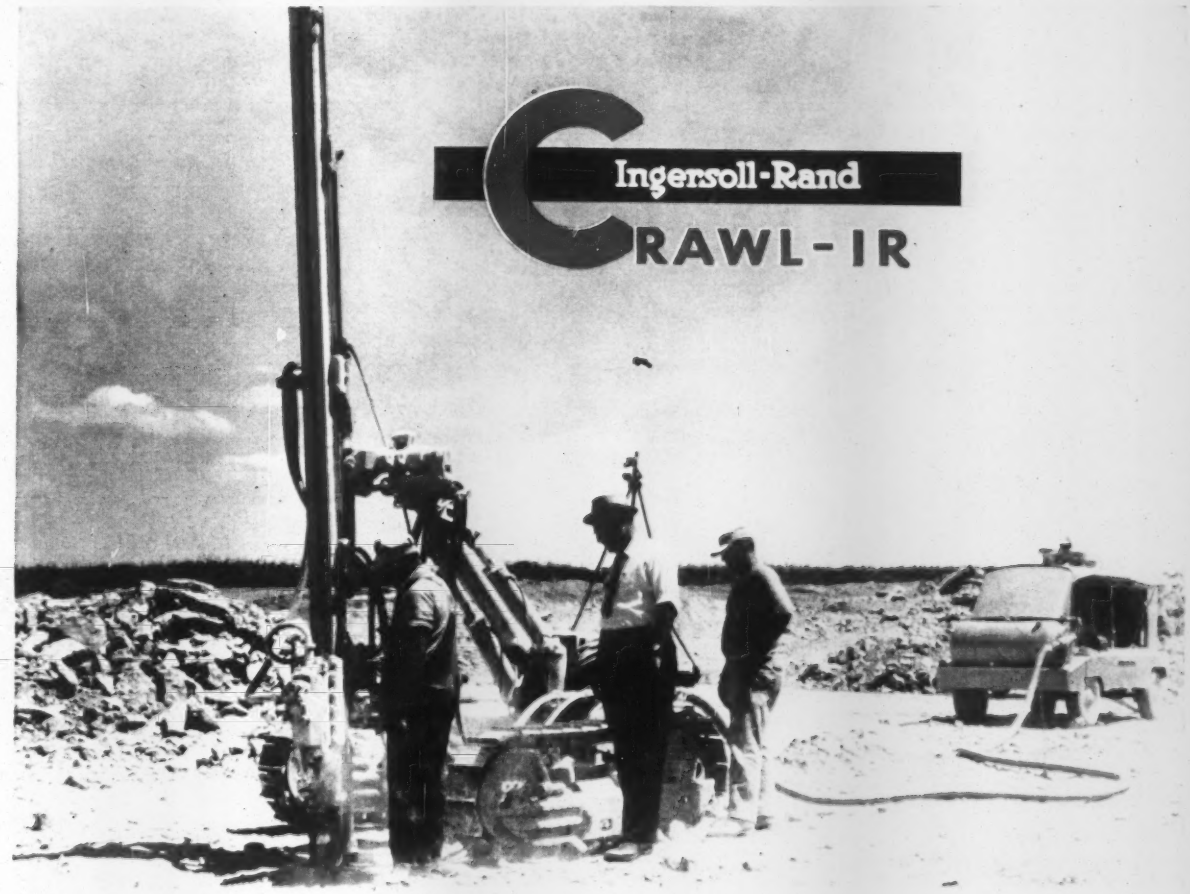
▲ Johnson, Drake & Piper Inc., 9009 San Leandro St., Oakland 3, Calif., CA $7,844,000, general constr. phase 1, tilt up precast concrete walls, prestressed concrete medium security PRISON, State Dpt. Corrections at California Mens Colony, incl. admin. hospital, class room dining, structure gate house, 8 housing units, 4 recreation areas, industries shop, laundry, bakery, kitchen, canteen, central tower, boiler house, ware house, commissary, electrical substation, ground work and utilities, W.O. 3721GC-19, LOS PADRES, CALIF., State Div. Architecture, 1100 S. Grand Ave., Los Angeles, Calif. Grand total $11,009,787. Bids Dec. 23. CD 12/30, under LB.
Hickman Bros. Inc., 3170 E. 11th St., Los Angeles, Calif., CA $2,182,000, combined mechanical work, (Los Padres, Calif.).
Newbery Electric Corp., 1038 Venice Blvd., Los Angeles 15, Calif., CA $983,787, electrical work, (Los Padres, Calif.). CD 1/5, under LB.

▲ Johnson, Drake & Piper, Inc., 9009 San Leandro St., Oakland, Calif., CA $2,149,000, reinforced HALL OF JUSTICE, OAKLAND, CALIF., City, City Hall, Oakland, Calif. Awarded Dec. 30. CD 12/9, under LB.

CANADA

HEAVY CONSTRUCTION—LB & CA

▲ Pigott Constr. Co., Ltd., 1600 Dorchester St. W., Montreal, Que., CA Est. $10,000,000, HANGARS AND WORKSHOPS, Overhaul and Maintenance Base, Montreal Airport, DORVAL, QUE., Trans-Canada Airlines, 1080 University St., Montreal, Que. Bids Dec. 19. Awarded Dec. 19. CD 12/2.



"THE BEST WE EVER HAD"

says Francis Smalley, President
D. R. Smalley & Sons, Inc.

"It's by far the fastest of its kind and that's just what we wanted. The best we ever had!" This is Francis Smalley's comment on the new CRAWL-IR shown above. It proved its performance on the rock work for relocation of highway U.S. 40 on the outskirts of Dayton, Ohio, under contract to D. R. Smalley & Sons, Inc., of Celina, Ohio.

The CRAWL-IR, with fully hydraulic controls, was used with I-R Carset bits and powered by a 600-cfm GYRO-FLO portable compressor—a team which easily broke all previous performance records for this type of work.

The Ingersoll-Rand CRAWL-IR is a *completely mechanized*, self-propelled knee-action crawler drill at its rugged best. Five large, double-acting hydraulic cylinders move the feed tower to *any position* at the touch of a throttle. Reverse rotation of the powerful D-45 drill permits adding and removing coupled steels in a hurry. And the powerful, air-motor-driven crawlers permit the unit to tow its own compressor, even over rough terrain.

Time formerly spent in moving, setting up and steel handling is now turned into *drilling time*. With drill positioning fully mechanized, one-man operation is entirely feasible.

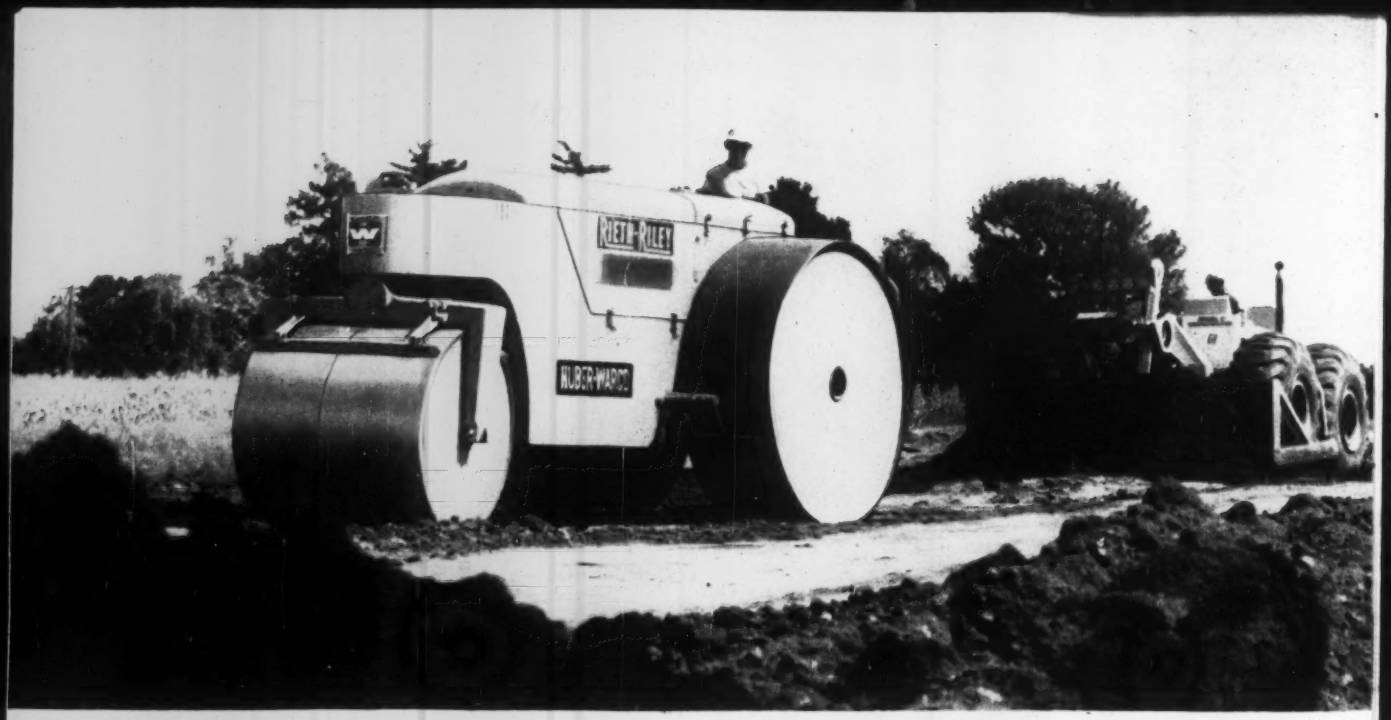
Ask your I-R man for complete information on the time-saving, money-saving features of the new CRAWL-IR.

Ingersoll-Rand

14-793

11 Broadway, New York 4, N.Y.

A CONSTANT STANDARD OF QUALITY IN EVERYTHING YOU NEED FOR DRILLING ROCK



A Huber-Warco 3-wheel roller compacting an earth fill on a Reith-Riley job near Richmond, Indiana.

H-W helps Reith-Riley

Throughout Indiana and Southern Michigan, the name Reith-Riley is BIG in construction.

In order to stay close to this busy construction area, Reith-Riley Construction Company, Inc., has set up a network of offices, each staffed with competent construction personnel.

Control point for this network is the company's main office at Goshen, Indiana. Branch offices are located in South Bend, Elkhart and Walcottville, Indiana, and Battle Creek, Michigan. A fleet of construction units is assigned to each office for greatest efficiency in handling projects.

An important part of this fleet is fifteen tandems, seven 3-wheel rollers and three maintainers, all products of Huber-Warco Company.

In 1925, Reith-Riley purchased their first Huber roller and during the 33 years to follow, they have purchased a total of 30 Huber-Warco units. These H-W units have been major factors for Reith-Riley in the compaction of millions of yards of earth and stone, and several million tons of asphalt.

From the job sites . . . South Bend, Crawfordsville and Richmond, Indiana; Battle Creek and Hartford, Michigan . . . the general consensus is, "Huber-Warco's are hardy, de-

Terms up to 36 months and rentals available . . . contact your Huber-Warco distributor.

Huber-Warco Company

MARION, OHIO

Huber-Warco on the job

For 33 years, Reith-Riley Construction Company, Inc., of Goshen, Indiana, has been a customer of Huber-Warco. We're proud of this long association.

At Hartford, Michigan, two H-W tandems compact the wearing course on a section of Route 12.

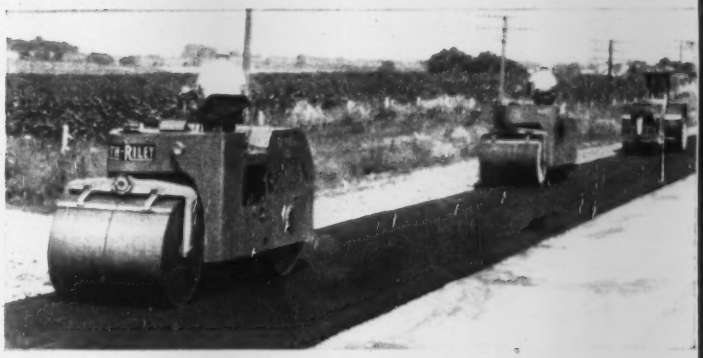
A Huber-Warco 3-5 ton tandem compacts a hospital emergency entrance and parking lot in South Bend.

pave the way

pendable machines, and we've been able to operate them with very little maintenance."

Just as Huber-Warco equipment has played an important part in Reith-Riley operations, this same efficiency and dependability can also be important to the operations of your company.

Your Huber-Warco distributor would like to show you the profit-producing features of Huber-Warco motor graders, tandem and 3-wheel rollers and the maintainer. A demonstration is proof-positive of product performance.



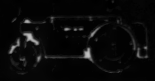
These H-W tandems are compacting the binder course on a highway near Crawfordsville, Indiana.

HUBER W WARCO

TANDEM ROLLERS

MOTOR GRADERS

MAINTAINER



3 WHEEL ROLLERS

NEW S-12

joins Euclid Rear-Dump Line!

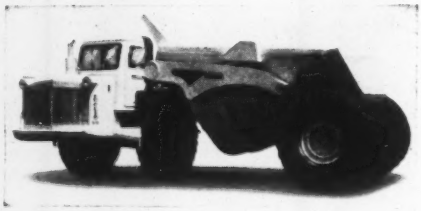
The Model S-12 Euclid-Easton hauler—with payload capacity of 44,000 lbs.—is a new size Euclid over-hung engine type semi-trailer rear-dump. Designed and built as a complete, balanced unit, it combines the experience of two leading manufacturers of hauling equipment for mines, quarries and heavy industrial and construction work.

With 218 h.p. and 5-speed gear transmission the S-12 has a fast travel speed and ample power for the toughest jobs. Big 24.00 x 25 tires on all wheels provide traction and flotation for operation under conditions that would stop other haulers. For work in close quarters the 90° hydraulic steering and variable wheel base gives the unit exceptional maneuverability and helps cut cycle time.

Well reinforced body is constructed of special alloy steel to withstand the impacts of shovel-loaded rock and heavy excavation. Single stage double-acting hoists raise the body quickly, with smooth positive control all during the dumping cycle.

Have your Euclid dealer show you how this Model S-12, or the 12 and 35 ton semi-trailer models with 143 and 325 h.p., can cut hauling costs. He'll be glad to tell you about other Rear-Dump "Eucs" of 10 to 50 ton capacity, too.

22-ton capacity
14 yds. struck
218 h.p.
24.00 x 25 tires
22.6 mph top speed



Euclid semi-trailer rear-dumps are available in 3 capacities—12, 22 and 35 tons with 143, 218 and 325 h.p. Tractors for these models are interchangeable on 7, 12 and 21 yd. scrapers.

EUCLID Division of General Motors Corp., Cleveland 17, Ohio

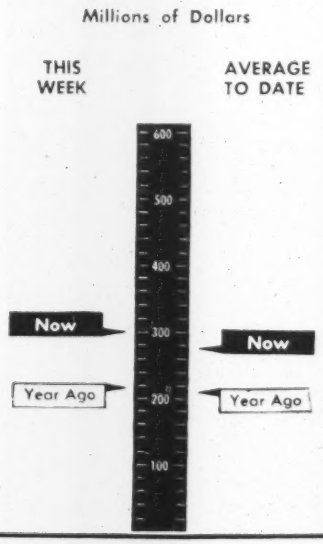
GM GENERAL MOTORS EUCLID

EUCLID EQUIPMENT

FOR MOVING EARTH, ROCK, COAL AND ORE

Construction Scoreboard

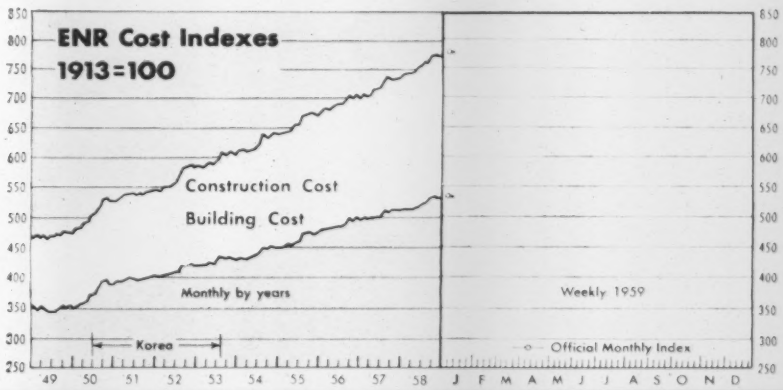
CONTRACT AWARDS



CURRENT COST INDEXES

ENR INDEXES (1913=100), 20-cities average	Week of Jan. 8 1959	% Change from Dec. 11 1958	% Change from Jan. 9 1958
Construction Cost	778.28	+0.6	+4.7
Building Cost	536.23	+0.3	+3.8

To convert above indexes to 1926 = 100: Divide Construction Cost by 2.080; Building Cost by 1.850.
1949 = 100: Divide Construction Cost by 4.770; Building Cost by 3.518.



AMOUNT OF CONTRACTS LET

By Ownership	This Week millions	Cum. 3 wks 1959 millions	Chge '58-'59 %
All Heavy Constr.	$301.6	$834.8	+28
Private	125.1	272.4	−5
Public	176.5	562.4	+55
State & Municipal	128.4	419.6	+41
Federal	48.1	142.8	+123
By Type of Work			
Public			
Waterworks	4.6	19.3	+47
Sewerage	3.4	37.8	−11
Bridges*	11.1	48.5	+422
Highways	57.1	164.4	+39
Earthwork, Waterways	1.2	28.6	+140
Buildings, Excl. Housing	75.6	167.4	+59
Housing	7.0	19.1	−15
Unclassified	16.5	77.3	+183
Private			
Buildings			
Mass Housing	52.3	116.4	+16
Commercial	14.8	65.1	+15
Industrial	55.4	81.3	−16
Unclassified	2.6	9.6	−72

*Includes private bridges.

NOTE: Minimum size projects included are: Waterworks and waterways, $53,000; other public works, $88,000; industrial buildings, $110,000; other buildings, $400,000.

NEW CAPITAL FOR CONSTRUCTION

	Week of Jan. 8 millions	Cum. 2 wks 1959 millions	Chge '58-'59 %
Corporate Securities	$ 46.9	$ 48.6	+38
State and Municipal:			
All Except Housing	215.9	233.9	−21
Housing			−100
Federal Loans	0.3	3.1	−33
Federal Aid			
Total Nonfederal	$263.1	$285.6	−15
Federal Appropriations:			
Projects in U. S.			
Outside U. S.			
Total New Capital	$263.1	$285.6	−15

CONTRACTS AWARDED

	Dec. (millions)	1958 12-Mos. (millions)	% Change from 1957 Dec.	% Change from 1957 12-Mos.
Total U. S., ENR reported	$1,351.8	$19,104.6	+40	+7
Private	562.3	7,730.2	+37	−8
Public	789.5	11,434.5	+42	+19
State and Municipal	637.4	8,608.4	+26	+16
Federal	152.1	2,826.0	+191	+29
ENR Volume Index, 1913=100	466	531	+31	+3

NEW CONSTRUCTION CAPITAL

Total U. S.	$741.9	$18,189.5	+48	+9
State and Municipal Bond Sales	454.9	6,371.9	+24	+10
Corporate Security Sales	275.3	5,041.0	+129	−11
Federal Loans, Aid (nonfederal work)	11.6	2,795.4	−15	+18
Federal Appropriations (federal work)		3,981.2*	0	+42

* Includes funds for outside U. S.

MATERIALS SHIPMENTS

	Unit	1958 Sept. Oct. Nov.	Cum. No. of Mos.	Percent Change from Year Ago Mo.	Cum.
Portland Cement, Bur Mines	thous bbls	24,528 N	290,425(11)	+18	+7
Concrete Paving Awards, PCA	thous sq yd	7,905 O	102,191(10)	+19	+31
Fabricated Structural Steel					
Bookings, AISC	thous tons	271 N	3,398(11)	−19	−12
Reinforcing Bars, Net, AISI	thous tons	243 N	2,577(11)	+11	−12
Lumber, NLMA	thous tons	152 N	1,892(11)	+7	−13
Orders	mil fbm	2,624 N	30,614(11)	+7	−2
Production	mil fbm	2,115 N	30,267(11)	+1	−2
Clay Products, Bureau of Census	mil fbm	2,691 N	30,171(11)	+9	−2
Brick, Unglazed, Common, Face	mil bri	660 7 S	4,751 8(9)	+16	+3
Vitrified Clay Sewer Pipe	thous tons	184 0 S	1,293 7(9)	+23	+2
Structural Tile, Unglazed	thous tons	49 7 S	417 5(9)	+8	−8
Asphalt Products, Bureau of Census					
Asphalt Roofing	thous sales sqs	6,079 1 S	46,010 7(9)	+11	+12
Asphalt Siding	thous sales sqs	113 9 S	372 3(9)	+0.5	−3
Aluminum, Wrought, Net, Bur Census					
Sheet and Plate (non-heat treatable)	mil lbs	91 6 O	788 1(10)	+10	−1
Wire and Cable	mil lbs	23 4 O	226 0(10)	+5	−6
Extruded Shapes (soft alloys)	mil lbs	74 9 O	569 4(10)	+22	+5

EMPLOYMENT AND FAILURES

Contract Const Employment, BLS	thous	2,774 N	2,662(11)**	−1	−6
Contractor Failures, Dun & Bradstreet					
Number		176 N	1,986(11)	−9	+3
Liabilities	thous	$9,483 N	$105,057(11)	−29	+0.4

** Average per month

Credit Executives Urge Less Retainage

Group says lower percentage and uniform formulas would benefit all segments of construction industry

Contractors are getting support for more standard and less punitive retainage rates and procedures from the National Association of Credit Management.

Retainage is the practice of withholding from progress payments to contractors a percentage of the value of construction work done during given periods. The amount retained is specified in the contract.

The credit management group consists of executive personnel in the credit departments of commerce and industry. The organization is set up to study existing methods and means to improve, modify, or economize existing credit extension practices.

"Retained percentages" on construction work completed obviously has direct effects on those industries serving construction, such as building materials manufacturers and producers of construction machinery.

It is believed that some retainage percentages work a hardship on the general contractors and subcontractors and the suppliers of materials to both groups. For this reason, the association advocates lower and more uniform retainage rates for both private and public construction. Emphasis, however, is on private work.

NACM has resolved to seek the suggestions and support of all national trade and professional organizations and individuals in the construction industry for improved formulas.

The retained percentages vary widely from state-to-state and from job-to-job. The range is from 5% to as high as 20% (ENR Oct. 17, 1957, p. 293). Retained percentage procedures also vary widely.

NACM points out that, in the past, the amounts of progress payments on a job had roughly approximated the value of the completed portions. The payments approximately covered actual costs to contractors, subcontractors and suppliers.

This is not the case today, the association says. Current high costs and narrow profit margins prevent progress payments from covering the full cost of the work completed.

The association suggests as a model the Standard Form of Federal Construction Contract, Number 23, for Public Works. The terms of this form call for retainage at the rate of 10% until 50% completion, with no retainage thereafter. This formula has already met with approval from the Associated General Contractors. AGC recommended at its convention last year that the American Institute of Architects incorporate the retainage terms of the Federal Standard Form in the AIA Standard Form of Contract.

AGC's recommendation also provided for consent of the surety firm involved before eliminating retainage after 50% completion.

AIA, however, does not want to write the stipulated retainage into its suggested Standard Form. The architects believe retainage is something that should be left strictly to the private owners and other parties to the contract.

The NACM resolution says progress payments are the responsibility of the owner, architect and general contractor, and that a "reasonable retention of a percentage of payment due for work is necessary to protect" owner interests.

It points to the Standard Federal Contract, however, and says that for more than 20 years it has "generally worked to the mutual advantage and satisfaction of all or most parties."

For this reason, NACM urges extension of the federal agreement to private work wherever possible.

Two Industrial Parks Proposed

Proposals were unveiled last week for two industrial parks: one in New York City and the other at Langley, British Columbia, about 30 miles east of Vancouver.

The New York City Park, to be located in Brooklyn, will be sponsored by the city. City officials estimate the development could cost $20 million and provide employment for 3,000 persons.

The British Columbia proposal involves investment under private sponsorship estimated at $600 million. Sponsors of the development are Grosvenor-Laing (B. C.) Ltd. and Western Development and Power Ltd., a subsidiary of B. C. Electric Co.

The project will cover about 4,000 acres now controlled by the sponsors.

Industrial facilities will occupy 75% of the total area, but residential and commercial development will be included. The first group of factories is expected to be started in four to five years.

Announcement of the project was made jointly by Wallace B. Haughan and General Sir Oliver L. Roberts, chairman and president, respectively, of Grosvenor-Laing, and E. Douglas Sutcliffe, general manager of Western Development and Power Ltd.

• **Expansion in Brooklyn**—The proposal for Brooklyn comes seven months after the announcement of private sponsorship of an industrial park in the same area (ENR May 29, 1958, p. 84).

In May, Milton Steinberg and Associates received the go-ahead signal from New York City for a $30-million industrial development in the Flatlands section of Brooklyn.

The industrial facility to be sponsored by the city also will be located in that area. Land for the project will be sold by the city to private developers. Approximately 100 acres are involved, most of it vacant.

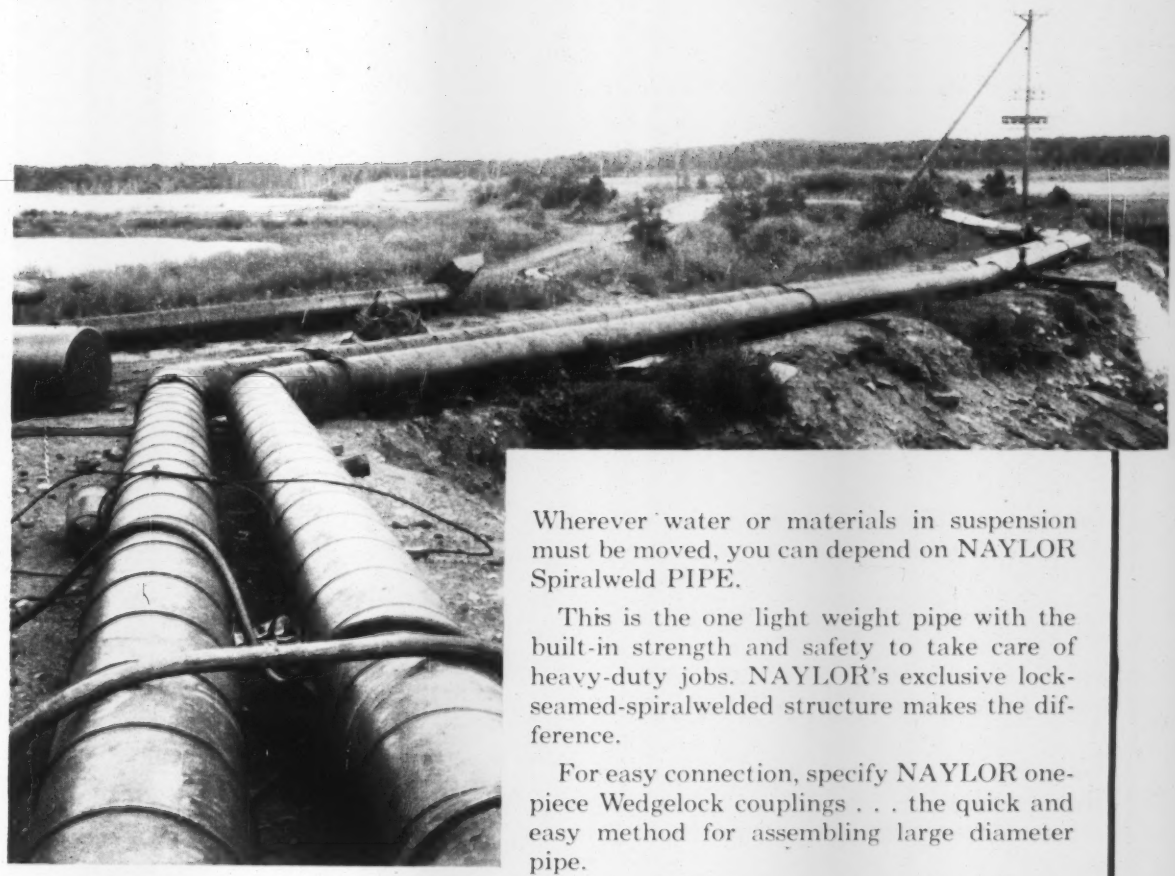
According to Mayor Robert F. Wagner and James Felt, chairman of the city's Urban Renewal Board, private developers will be found before land is assembled.

• **Full recovery expected**—Those portions of the site not owned by the city will be condemned and resold to the developers. Because write-down of land cost is allowed under law, sale price of the land to private owners will equal or perhaps top the city's acquisition cost. Property involved is assessed at $2.7 million. It yields approximately $40,000 annually to the city in tax revenue. Mr. Felt says that when developed as planned, the same land should bring a tax revenue of about $700,000 a year.

• **Big doings in B. C.**—The Langley Project, located in the heart of British Columbia's Fraser Valley, is expected to house $600 million worth of factories and plants. Grosvenor-Laing says it may be the site of a major auto manufacturing plant and other heavy industry.

(*B&F continued on page 106*)

Makes LIGHT WORK of **HEAVY** HAULS



Wherever water or materials in suspension must be moved, you can depend on NAYLOR Spiralweld PIPE.

This is the one light weight pipe with the built-in strength and safety to take care of heavy-duty jobs. NAYLOR's exclusive lock-seamed-spiralwelded structure makes the difference.

For easy connection, specify NAYLOR one-piece Wedgelock couplings . . . the quick and easy method for assembling large diameter pipe.

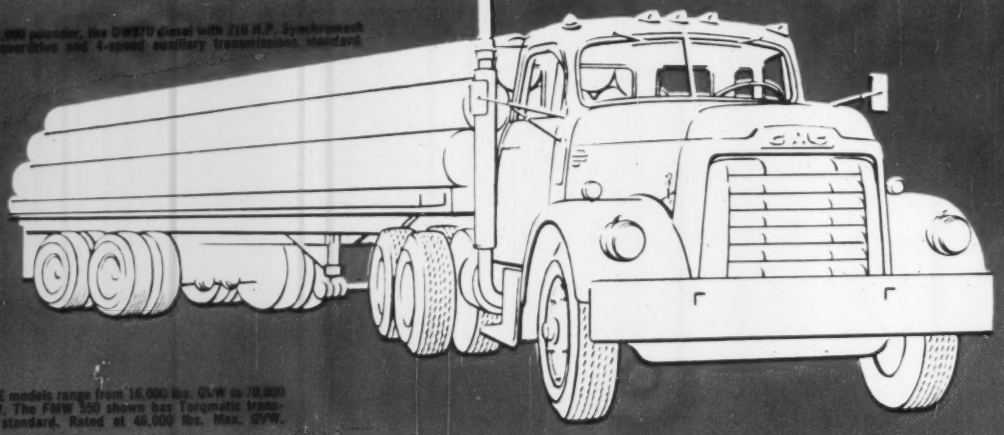
For complete details in capsule form, write for Condensed Catalog No. 59.

NAYLOR PIPE *Company*

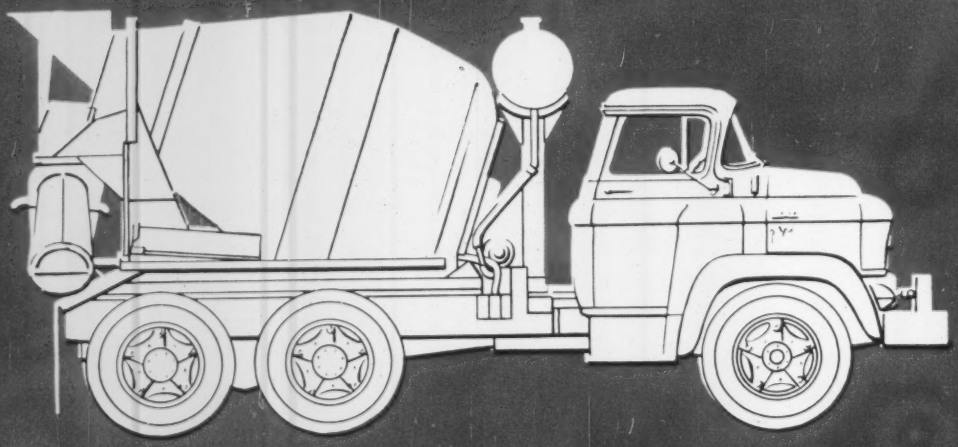
1248 East 92nd Street, Chicago 19, Illinois

Eastern U. S. and Foreign Sales Office: 60 East 42nd Street, New York 17, N. Y.

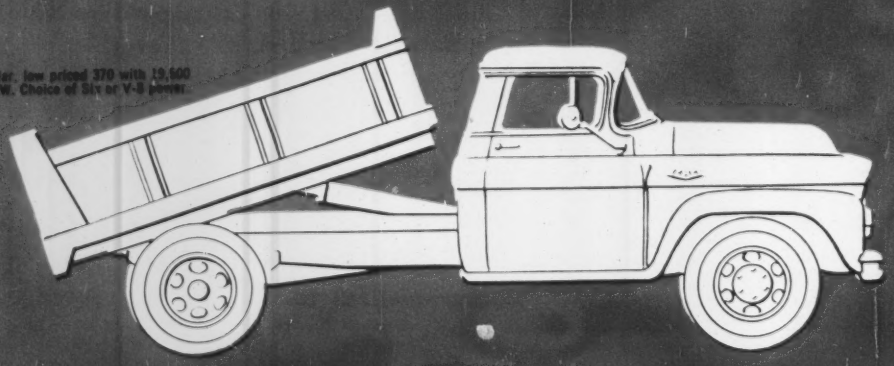
GMC's 32,000 pounder, the DW870 diesel with 210 H.P. Synchromesh 5-speed overdrive and 4-speed auxiliary transmissions standard.



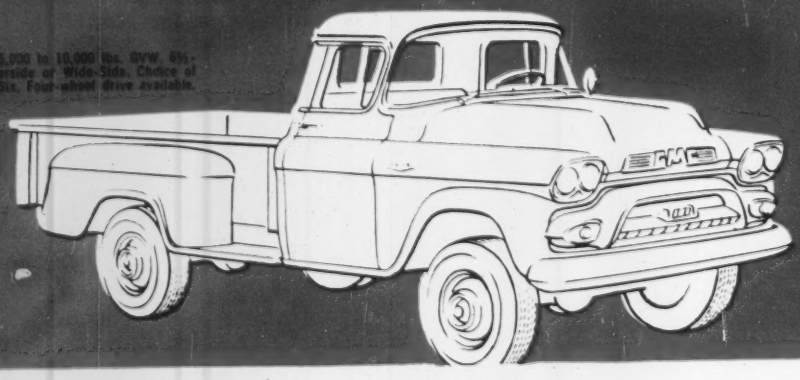
GMC COE models range from 16,000 lbs. GVW to 70,000 lbs. GCW. The FWW 550 shown has Torqmatic transmission standard. Rated at 46,000 lbs. Max. GVW.



This is the popular, low priced 370 with 19,500 or 22,000 lbs. GVW. Choice of Six or V-8 power.



GMC pickups range from 5,000 to 10,000 lbs. GVW. 6½-, 8- or 9-foot lengths, Fenderside or Wide-Side. Choice of 200 H.P. V-8 or 138 H.P. Six. Four-wheel drive available.



GMC

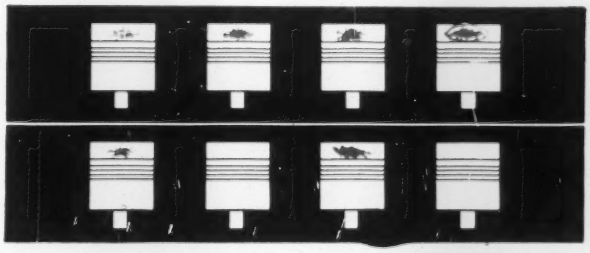
OPERATION "HIGH GEAR"

It's bringing you more "Guts and Go" for less dough than anything built for the construction industry!

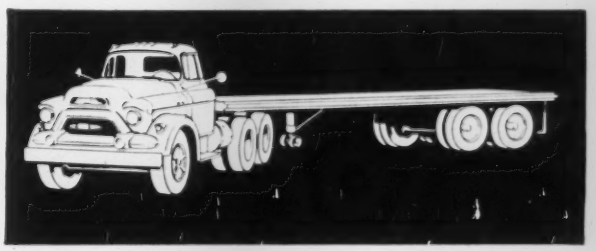
The most dynamic engineering, design and quality-control program the industry has ever known is bringing you the greatest money-saving, money-making advances in trucks today.

A new heavy-duty diesel engine with record-breaking economy and long, reliable life! New M-400 bearings with *seven times* the life of others! These are just a few of the things GMC Operation "High Gear" is bringing you. That's why there was never a better time than right now to see your GMC dealer.

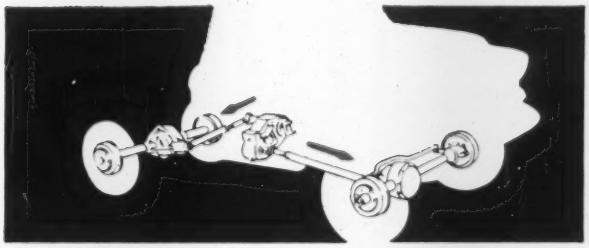
GMC Truck & Coach—a General Motors Division.



Higher efficiency yet lighter weight! With GMC 2-cycle diesel (at top) *every* down stroke is a power stroke. 4-cycle diesel (at bottom) used by all other leading manufacturers only gives a power stroke *every other* down stroke. GMC engine delivers more horsepower per cubic inch and actually weighs less!



Biggest selection of Six-Wheelers in the industry! There's a model for every job. You choose from the widest combination of components ever offered—engines, axles, tandems, wheelbases, GVW's and GCW's—any combination that does the job at lowest cost!



Positive traction on any terrain! A GMC with 4-wheel drive goes up even 60% grades with a full load. Driving on all four wheels doubles traction . . . jobs never get bogged down.

From ½-ton to 45-ton . . . General Motors leads the way!

GMC
GENERAL MOTORS CORPORATION
TRUCKS

Machinery Prices Go Up

Nearly all major construction equipment lines now are more expensive than they were four months ago.

Price increases have chopped purchasing power from the contractor's equipment-buying dollar for the ninth consecutive year.

Prices increased 68% over the 1947-49 average as of last November, according to the U.S. Bureau of Labor Statistics Index of Manufacturers' Prices. Since 1949, the last year prices dipped, the BLS index has risen by 35%.

The BLS index will rise again when the December value is reported, reflecting price increases announced since mid-November.

Most recent additions to the price upturn are Allis-Chalmers, Barber-Greene and Mack Truck. All three concerns say price increases will be announced soon (ENR Dec. 11, 1958, p. 114).

A-C's crawler tractor prices are up an average of 8%, and prices of its tractor scrapers are higher by about 5%. This is the only scraper line to move up in price.

Barber-Greene construction equipment prices are up 2½% to 5%, bituminous paving machines up 3½% and asphalt plants up 4% to 5%.

Prices of Mack Truck off-highway dump trucks are larger by an average of 3%, although some models were raised by 5%. Some models, including the 22-ton rig, are slightly reduced.

Contractors are finding it more difficult to absorb the upward price push of new equipment's original costs. Although today's machines are much more productive than their 1949 counterparts, prices have increased more than machinery output. The BLS indexes allow for quality changes, so the figures indicate the actual erosion of the contractor's equipment dollar.

Low profit margins and depreciation allowances for tax purposes make contractors increasingly sensitive to price increases. Some distributors say the latest increases will make it more difficult to move new machinery.

Machinery Orders Dip Slightly

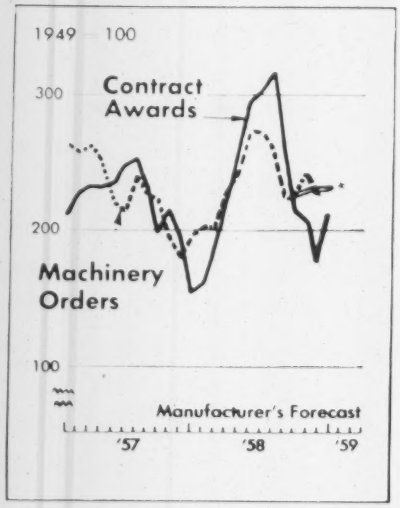
Contractors trimmed the volume of their new orders for construction machinery in November. But the decline from October was slight.

Orders for November still topped the low volume of one year ago by 24%. The New Orders Index for November is 224, the McGraw-Hill Economics Department reports. In October, the index value was at 241. The index is based on 1949 = 100.

Construction equipment orders held up much better during late 1958 than the contract-awards trend (see chart). The brisk rebound in December heavy construction contract awards reported by ENR indicates that equipment purchases will continue at a high rate. If this is the case, the average index value of machinery orders for the fourth quarter of 1958 may match, or rise slightly above 233. Manufacturers had forecast that their volume for the final three months of last year would be sufficient to attain that average.

The heavy construction Contract Award Index for December rose from 177 to 215. This index is also based on 1949 = 100. The December value is the highest since August and exceeds the December 1957 low by 40%.

The rebound in contracts during last year's final month reflects new strength in private, federal and local public works.



Up to the Judge

Start on $50-million oil refinery rests on decree

Timing of construction on a $50-million oil refinery near Jamestown, R. I., hinges on a court decision this week.

Should it be unfavorable to the owner, Commerce Oil Refining Corp., a start on the facility could be delayed for several months.

The company has already been delayed more than 19 months, first by the U. S. Navy and the Corps of Engineers, then by residents of nearby Jamestown.

According to a company executive, if the decree establishes limitations that "are not possible to live with, we will appeal the decision of the Federal District Court at Providence. We are determined to construct the oil refinery installation."

Commerce first encountered difficulties in June, 1957, when the corporation announced plans for construction of the refinery at Conanicut Island in Narragansett Bay. The Engineers and the Navy protested. Both contended that a 1,300-ft tanker pier would interfere with naval operations. The Navy said torpedo tests conducted by its nearby Gould Island Test Station would be hindered. This obstacle was removed when Navy officials accepted Commerce's offer to build an L-shaped pier equipped with submarine nets and other safety devices to catch stray torpedoes.

Residents of Jamestown and Newport then entered their objections and acted to delay construction.

They said the installation would bring air and water pollution to the area. Commerce agreed to modify its plans and Newport withdrew from active opposition.

Jamestown, on the company's recommendation, amended its building codes for refinery standards and established new zoning and licensing regulations.

But the Jamestown Protective Association, a property owner group, continued to object. Commerce filed a civil damage suit in federal court for $34 million charging members of the association with conspiracy. The association filed a counter-suit for an injunction to prevent the company from building the refinery. Commerce dropped its suit, but the association continued to press its action.

Judge Edward W. Day concluded hearings in the summer and last week filed his opinion. However, the decree that would outline prohibitions or grant the injunction will be given this week.

(B&F continued on page 108)

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BAY CITY SHOVELS INC., BAY CITY, MICHIGAN, U.S.A.

107

'Will-Fit' Parts Makers Organize

Independent tractor parts rebuilders, parts manufacturers and their suppliers and distributors have formed a new organization, as yet unnamed.

The manufacturers produce "will-fit" parts for all types and makes of construction equipment. They, with their suppliers and distributors, are not affiliated with manufacturers of original equipment and components.

The following officers were elected at the organizational session in Roanoke, Va.

President—Sam B. Maximon, president of Maximon Machine Co., Inc., Altoona, Pa.

Vice president—Edwin A. Hess, secretary-treasurer of Allied Welding and Manufacturing Co., Hillside, Ill.

Secretary—Harry Cooke, of Automatic Welding Co., Waukesha, Wis.

Treasurer—Clarence A. Goss, president of Goss Supply Co., Zanesville, Ohio.

The officers will decide on a name and seal for the association, location of its national headquarters and date and location of the first convention. This meeting is tentatively scheduled for June.

There are 450 to 500 companies operating independently of the construction equipment manufacturers, a group spokesman says.

Representatives of the Associated Equipment Distributors and the Construction Industry Manufacturers Association say they are aware of the establishment of the organization. They are generally noncommittal.

Another Record Set in 1958

New construction put in place in 1958 scored a new record, according to a joint estimate of the U. S. Departments of Labor and Commerce.

The total of $49 billion tops by 2% the 1957 figure of $48.1 billion. The 1958 figure is revised upward from the $48.8 billion estimate announced two months ago (ENR Nov. 20, 1958, p. 21).

Private work of $33.9 billion was only 0.1% under 1957's volume, despite a 31% slump in industrial building and a 6% drop in construction of stores, restaurants and garages.

Industrial building skidded from a 1957 total of $3.6 billion to $2.4 billion in 1958.

Backbone of 1958's private building activity was construction of new dwelling units. This type of building tallied $13.4 billion, a 6% increase over the 1957 total of $12.6 billion. Additional support was provided by expenditures of $3.9 billion for residential additions and alterations. This is only 1% below the 1957 peak.

Office buildings and warehouse construction set a new record—almost $2 billion, up 5% from the 1957 record.

Public construction put in place topped the record total of 1957 by 6%. Volume amounted to more than $15 billion compared to $14.1 billion in 1957.

New highs were set in highways, $5.4 billion, up 8% from 1957; education buildings, $2.9 billion, up 2%, and sewer projects, $837 million, up 7%.

New highs were also registered in nonhousekeeping units (motels), private schools, private and public hospitals, social and recreational buildings, public service enterprises and conservation.

Kaiser Wins Brazilian Steel Plant Contract

Construction contract for a $170-million Brazilian steel plant has been awarded to Henry J. Kaiser Co.'s Heavy Construction Division. The plant will be built at Piracaguera for Companhia Siderurgica Paulista, Sao Paulo.

Henry J. Kaiser Co. and its subsidiaries—Kaiser Engineers International, Inc., and Kaiser Engenharia E Construcoes, Ltda.—will provide consulting engineering, expediting, purchasing and construction supervision services.

The 1,200-acre plant-site will contain coal handling facilities, 25 miles of railroad track, sinter plant, 53 coke ovens, a blast furnace and two 60-ton, LD processing plants. Other facilities to be constructed include iron ore and limestone crushing and screening units, soaking pits, slab and plate mills, a 66-in. hot strip mill with continuous pickling line, galvanizing equipment, cold reducing mill, oxygen producing plant and a 30,000 kw steam power plant.

Initial annual capacity of the plant will be 300,000 metric tons of rolled steel. The mill, Kaiser Engineers International's first big job in Brazil, will be financed by European equipment manufacturers and banks. It will be Brazil's second largest steel mill.

New Company Formed For Aluminum Bridge

A new product—the Fairchild aluminum bridge—has given rise to a new company—American Aluminum Structures, Inc. It will be headquartered in New York City.

The structure was designed and built by Fairchild Engine and Airplane Corp. of Hagerstown, Md. A group including Fairchild, several chemical and aluminum companies and the Bureau of Public Roads sponsored tests of the structure at Lehigh University, Bethlehem, Pa. (ENR Sept. 4, 1958, p. 25).

Results were sufficiently promising to warrant the establishment of a marketing and development company, according to Fairchild spokesmen.

Formation of American Aluminum brought about abolition of Fairchild's Kinetics Division. The new company is jointly owned by Fairchild and former management members of the Kinetics Division.

Yuba Industries Buys Southwest Welding Firm

Yuba Consolidated Industries, Inc., San Francisco, is the new owner of the Southwest Welding and Manufacturing Co., Alhambra, Calif.

Southwest Welding, with plants in Alhambra and Richmond, Calif., engineers, fabricates and constructs in the field heavy equipment for atomic energy, petroleum, chemical and hydroelectric plants.

Southwest fabricates and installs large diameter pipe and penstocks for hydroelectric and other power. It is now building a $7.5-million penstock at Garrison Dam in North Dakota. The firm also makes a line of road construction machinery sold under the name "Southwest."

British Refinery Job Goes To Stone & Webster

Stone & Webster, Ltd., of London, will design and build a new ethylene plant, the largest of its kind outside the U.S., for British Hydrocarbon Chemicals, Ltd.

The new plant, at Grangemouth, Scotland, will manufacture olefins for petroleum chemicals when it goes into production in mid-1960.

Of the 13 plants in British Hydrocarbon's petrochemical complex at Grangemouth, the new facility is the tenth to go to Stone & Webster for design and construction.

British Hydrocarbon is a joint undertaking of The British Petroleum Co. Ltd., and Distillers Co., Ltd.

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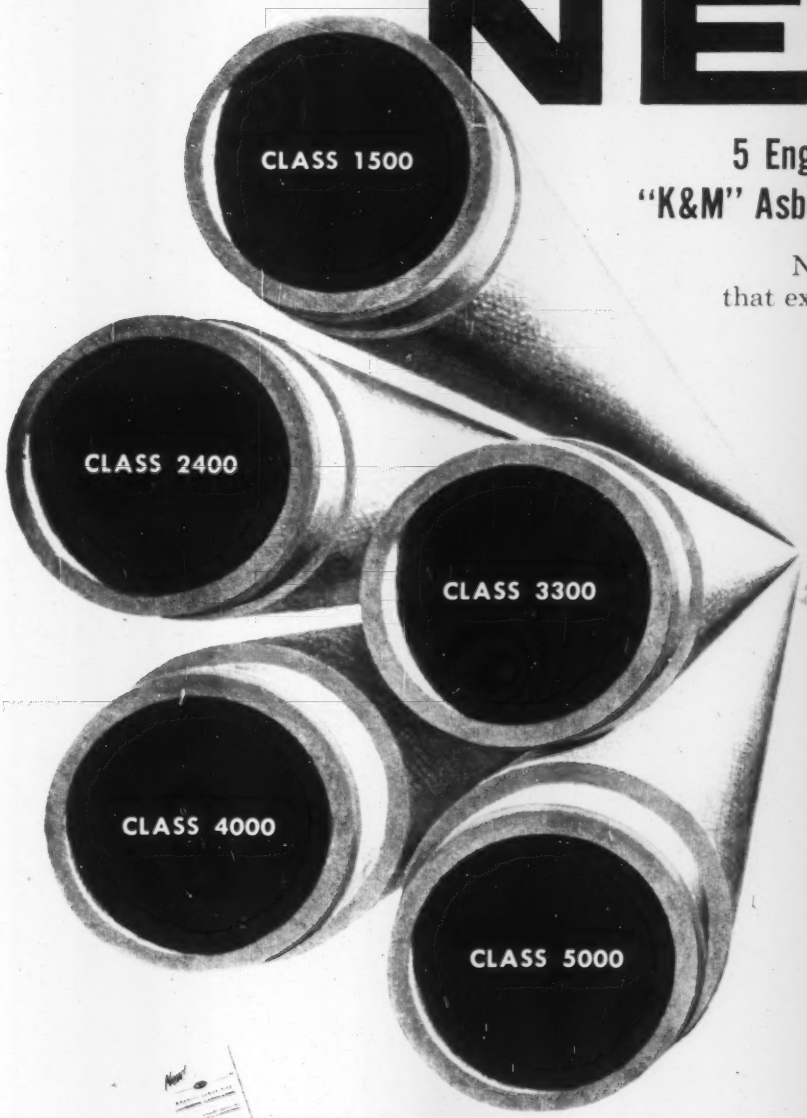

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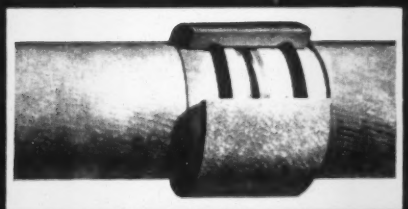

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Law Will Tighten Grip on Hoffa

- **This year the controversial teamsters' chief will face his biggest test yet—it could strip him of his union power.**
- **The first round opened last week with a request for stronger powers by the teamster monitors, Hoffa's watchdogs.**
- **Future challenges will come from the Justice and Treasury Departments and at least two Congressional committees.**

In 1958, James Hoffa won out over a combination of labor, government and the courts that had been out to depose him.

But this year, anti-corruption forces have gathered more ammunition against the teamster official, accused of running a corrupt labor union. Challenges will come from at least two Congressional committees, from such government departments as Internal Revenue and Justice—and will continue from the AFL-CIO and from a small group of mavericks within the trucking union.

The pressure has already added up to one major victory for the anti-Hoffa forces. And that was Mr. Hoffa's cancellation, last week of his plans for a March convention. It was through this maneuver that Mr. Hoffa hoped to be re-elected union chief and to bring an automatic end to the board of monitors, which is now closing in on him.

The running court suit started by 13 rank-and-file teamsters sounded this year's opening gun against the Hoffa regime and was promptly spiked by some legal work on the other side.

• **Here's what happened**—The court-appointed monitors spelled out the court order they wanted to force the Hoffa leadership to clean up the 1.6-million member union. They asked Federal Judge F. Dickinson Letts to order Mr. Hoffa to comply or be removed.

On the other side, John Cunningham, one-time head of the rank-and-file group, but now siding with Mr. Hoffa, asked the U. S. Court of Appeals to end the monitor system. This legal step temporarily halted Judge Letts follow-up of the monitors' request in the lower court. He postponed signing the new crackdown order pending what observers feel will be a dismissal of the Cunningham suit.

Behind this legal shuffling there were just two things in mind:

The three-man monitors board, led by attorney Martin F. O'Donoghue, wants the Hoffa-run union to follow its directives on ousting alleged corrupt leaders within the union and setting up new election and other democratic practices.

Mr. Hoffa, however, wants to cut the monitor strings. Since the collapse of the convention plans, the Cunningham action has become an alternative route to that goal.

• **Other attacks**—With these first legal steps, other attacks are starting up.

In Congress, the McClellan Anti-Rackets Investigating Committee is requesting—and is likely to receive—a $500,000 appropriation for conducting another year's hearings, which will again be directed mainly against the teamsters union.

The internal security subcommittee wants to probe the new Hoffa plan for an alliance of all transport unions—truck, sea, rail and air. It thinks the plan might be nipped in the bud under the anti-trust laws.

In government, the Internal Revenue Service is combing Mr. Hoffa's financial records—no mean task since he admits to keeping no records.

The Justice Department is also interested in a possible anti-trust case that could involve collusion between the teamsters union and employers. Both these probes are based, in part, on evidence from the McClellan committee hearings.

• **Some backward steps**—There are some signs that the teamster leader's momentum is slowing, despite the earlier Hoffa court victories and the growing strength of the teamsters union. Recently, Mr. Hoffa has had to back water on a couple of important issues.

He had proclaimed his union's intention of organizing some 10 million government workers, including firemen and police. The campaign started in New York City, with a plan to picket precinct stations to "show the union's economic power."

This plan was switched, in the face of severe public reaction, to picketing "for advertising purposes only," as Mr. Hoffa put it.

Even this proved too much, and Mr. Hoffa finally directed that "police organization will be taken by the teamsters union only if they come to us seeking such organization."

The other backtracking move has come in Mr. Hoffa's proposed transportation alliance. Widely heralded, the pact originally had only two co-signers, the International Longshoremen's Association, and the National Maritime Union. The latter union appears to have cooled off; other unions in railroads and on the airlines have shown no interest at all in signing up with the aggressive teamster official.

• **The big challenge**—At this point, the monitors pose a severe threat. When the monitors laid out a 75-page proposed order against the teamsters, they could be sure that Judge Letts would accept at least most of their recommendations.

In their charge against the Hoffa regime, the monitors claim the teamster leaders "have made no good faith effort to assist or to cooperate with the monitors . . . but embarked upon a course of attempting to frustrate and block the monitors in carrying out the necessary preparations prior to the holding of a convention."

(*Labor continued on page 112*)

NOBLE

Reduces set-up and labor costs over 50% in twin operation of two NOBLE highway batching plants on large airfield job!

Two NOBLE automatic batching plants in 1-stop arrangement are operated side-by-side to save considerable expense of separate stops for cement and aggregates in construction of Amarillo Air Force Base, Amarillo, Texas. A double driveway permits loading two batch trucks at the same time for simultaneous operation of two paving spreads, each with three dual drum pavers, on this 595,000 cubic yard project. Each 1-4 cubic yard batch contains *five* materials — sand, ¾" rock, 1½" rock, portland cement and natural cement. On a 17 second batch-cycle, twin plant weighs and delivers fourteen batches into two 7-compartment trucks in less than two minutes. Automatically controlled batcher dump cycle preblends cement and aggregates. Eliminates cover-up man and necessity for separate cement compartments in batch trucks. Two men operate this twin one-stop plant compared to four or more men for a pair of conventional 2-stop or 3-stop plants. Overhead storage for 500 barrels of portland and 500 barrels of natural cement. Two 550 barrel-per-hour elevators permit handling both types of cement simultaneously. Selector gates permit handling either type of cement by both elevators. Storage for 300 tons of aggregate. Unlike most large plants, this set-up can be separated when concrete requirements taper off. One unit can finish the airfield while the second is released for another paving job.

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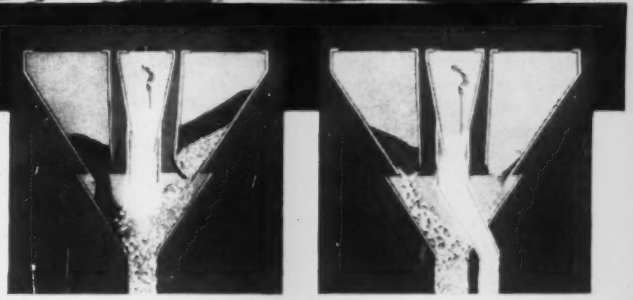

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NLRB Defines New Standards

Lower jurisdictional yardsticks reduce 'no-man's land' and make it easier for contractors to reach the board

There appears to be a determined effort under way to prevent the states from acquiring more control over the settlement of labor disputes.

The National Labor Relations Board has, within the last few weeks, spelled out the application of its new jurisdictional standards. This has been done on a case by case basis.

The result is that the no-man's land between state and federal jurisdiction has been materially reduced and the new Congress will be under less pressure to cede more power to the states. **The changes also mean that most contractors can now get to the NLRB.**

This has been accomplished in two ways:

- The board has adopted a more liberal concept of the impact of labor disputes on "interstate commerce," which is the basis of the board's legal authority.
- And it has made it easier for contractors, and other employers with relatively small-scale operations, to demand the board's attention.

This easier access is the result of the board's lowering its jurisdictional standards. These are the yardsticks under which the board declines jurisdiction of a labor dispute because its effect on interstate commerce is too small to bother with.

When the board declines jurisdiction, the parties to a dispute cannot turn to a state court or agency for relief because of the doctrine of federal preemption. They then find themselves in no-man's land.

• Behind the changes—The impetus to the new approach came from two directions—the U. S. Supreme Court and grass-roots pressure on Congress.

The judicial threat to the board's power appeared in the Guss case. There, the Supreme Court confirmed that the federal government has a monopoly on labor disputes that affect interstate commerce. It said a state has no power to act in a field the federal government has chosen to occupy and it suggested the NLRB reassert its jurisdiction or that Congress "change the situation."

The Congressional approach was tried without success by employers and unions alike last year. But they could not agree on what they wanted. Some wanted the NLRB forced to exercise its full jurisdiction; others wanted the states empowered to step in when the NLRB defaulted. Congress ducked the issue by taking no action at all.

The board, in an attempt to forestall further criticism, has come up with new jurisdictional yardsticks. They include a $50,000 test and new rules for defense contractors and members of employer associations.

The NLRB has also decided to entertain automatically any labor dispute where the employer refuses to submit information the board needs to determine whether the new tests are met.

• The $50,000-test—A contractor can now file an unfair labor practice charge with the NLRB if he does $50,000 worth of interstate business a year.

In one of the explanatory cases, the board says the volume of business includes:

- Goods shipped or services performed outside the state (direct outflow).
- Goods or services furnished to someone who is engaged in interstate commerce (indirect outflow).
- Goods or services furnished directly to the employer from outside the state (direct inflow).
- Goods or services originated outside the state but bought from a seller inside the state (indirect inflow).

The board will look at the total of inflow or outflow but will not add inflow to outflow in applying the test.

In explaining the easier access to the NLRB, the board said a labor dispute "obstructs commerce" whether the goods or services are flowing into or out of a state.

It also noted that the law is as concerned with labor disputes in businesses that affect commerce as with those in businesses that are in interstate commerce. And the new rules, it said, will be cheaper and easier to administer.

• Defense work—The board has, in addition, simplified qualification for contractors working on defense projects.

The only qualification is that the work have a "substantial impact" on national defense. The contractor need not hold a government contract nor must he meet a dollar volume test.

Thus, a Charleston, S. C., ready-mixed concrete company was held to qualify under the new defense work yardstick because it supplied a "substantial quantity" of ready-mix for use in construction of an Air Force base.

• Association members—A third rule allows contractors who are members of an association to qualify through the association. If the association can meet one or more of the tests, then the members are qualified.

The board has not yet interpreted the rule as it applies to contractors but has applied it to newspaper companies. The significant qualifying factor under that decision is this: If the "employers have joined together for the purposes of collective bargaining negotiations," then the board will treat the association "as a single employer for jurisdictional purposes."

• No delaying tactics—The board has also announced it will not allow recalcitrant employers to defeat its efforts to handle more cases.

Whenever an employer refuses on "reasonable request" to submit the information necessary to determine jurisdiction under the new rules, the board will assert jurisdiction. And in doing so, it will not waste time on subpoenas.

This is particularly important, the board warns, in representation proceedings. The time element is important because delaying tactics are one way of defeating union organization.

In almost all these cases the board has said its primary function is to minimize industrial strife that interferes with the normal flow of commerce. The new standards are supposed to promote the exercise of that function.

Social Security Taxes Moved Up Another Notch

The federal tax burden on employers and workers moved up again this month when the new social security tax rates became effective.

Workers and employers have been paying a tax of 2½% on the first $4,200 of an employee's annual earnings. Now they're paying a tax of 2⅝% on a tax base of $4,800. This represents a maximum tax increase to employers of $25.50 per worker.

The tax payable by self-employed workers is also up. It is now 3¾% of the first $4,800 of annual earnings instead of 3⅜% of the first $4,200.

Construction Gate Picket Not a Secondary Boycott

Industrial union picketing of a plant gate used by construction workers hired by outside contractors does not add up to a secondary boycott. That is the ruling of a National Labor Relations Board trial examiner.

The picketing occurred last July during a two-week strike by a local of the International Union of Electrical Workers against General Electric Co. at its Appliance Park plant, Louisville, Ky.

GE filed an unfair labor practice charge against the union, claiming it had engaged in an unlawful secondary boycott aimed at forcing the outside contractors, who had no dispute with IUE, to cease doing business with GE.

The gate in question, it said, was used only by workers employed by independent contractors doing construction and repair work inside the plant.

The trial examiner found that the charge "has not been sustained" and dismissed it.

Sheet Metal Workers Sign Two-Year Contract

Sheet metal workers in Portland, Ore., have won a 53-cent increase in wages and fringe benefits under a new two-year labor contract.

The contract calls for 45 cents more an hour in wages, payable in four installments. This will push the journeymen's rate to $3.75 an hour on July 1, 1960.

Local 16 negotiated the contract with the Sheet Metal Association, Inc., the Portland Warm Air Heating & Air Conditioning Association, Inc., and the Ventilating Contractors of Oregon, Inc.

Fringe benefit increases under the new agreement include a 3½ cent hourly increase in vacation pay and, 2½ cents more in health and welfare.

The union also won another 2 cents an hour to be applied to an improvement in apprentice pay and to an increase in premium pay for night work.

Oregon Labor Seeks Contractor License Law

The Oregon State Building and Construction Trades Council, AFL-CIO, and several contractor groups will ask the 1959 Oregon legislature for a law requiring the licensing of contractors.

State employer associations backing the move are the Home Improvement Contractors' Association, the Mason Contractors' Association and the Painting and Decorating Contractors' Association.

(Labor continued on page 114)

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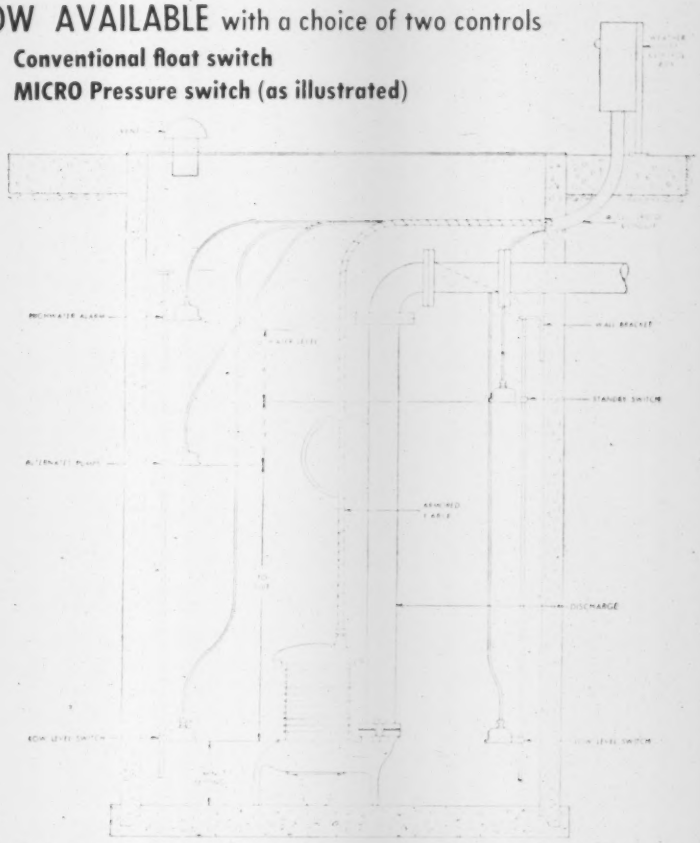

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Y4069	4	69	28.0 @ 3400 RPM
Y4091	4	91	36.0 @ 3400 RPM
F4124	4	124	47.0 @ 3200 RPM
F4140	4	140	52.0 @ 3200 RPM
F4162	4	162	58.0 @ 3200 RPM
F6186	6	186	77.0 @ 3500 RPM
F6209	6	209	90.0 @ 3500 RPM
F6226	6	226	98.8 @ 3500 RPM
F6244	6	244	103.3 @ 3500 RPM
M6271	6	271	96.5 @ 3000 RPM
M6290	6	290	108.0 @ 3000 RPM
M6330	6	330	125.0 @ 3000 RPM
M6363	6	363	146.0 @ 3000 RPM
B6371	6	371	123.5 @ 3000 RPM
B6427	6	427	142.0 @ 3000 RPM
FO6226	6	226	126.2 @ 3400 RPM
K6271	6	271	114.5 @ 3200 RPM
K6290	6	290	123.0 @ 3200 RPM
K6330	6	330	147.0 @ 3200 RPM
K6363	6	363	162.0 @ 3200 RPM
T6371	6	371	143.8 @ 3000 RPM
T6427	6	427	170.0 @ 3000 RPM
U6501	6	501	186.0 @ 2600 RPM
R6513	6	513	192.2 @ 2800 RPM
R6572	6	572	220.0 @ 2800 RPM
R6602	6	602	232.0 @ 2800 RPM
S6749	6	749	250.0 @ 2800 RPM
S6820	6	820	300.0 @ 2800 RPM
V8603	8	603	260.0 @ 3200 RPM

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Model	Cyl.	Displ.	Bare Engine H.P.
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RD6572	6	572	172.0 @ 2400 RPM
VD8603	8	603	200.0 @ 2800 RPM
SD6802	6	802	225.0 @ 2200 RPM

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Jobless Pay Plans

Higher costs evident: more flexibility sought

A flexible unemployment compensation system that would adjust itself to changes in the economic climate has been recommended in Idaho. Both the size and duration of jobless benefits would be tied to escalator clauses.

The proposal is one of many jobless insurance changes under consideration around the nation. All of them add up to higher costs for employers.

The Idaho plan is unique in its approach to current demands that unemployment compensation systems be modernized and improved. It was presented by the advisory council to the State Employment Security Agency and provides for extension of the duration of jobless benefits but limits the extension to periods of recession. The formula under which this might be accomplished was not specified, but the council has asked ESA for more statistical information for drafting a legislative guide.

The second escalator clause would limit the size of weekly benefits.

Maximum benefits for all insured workers would be $40 a week or 52½% of the average wage, whichever is larger. The weekly maximum would be recalculated each year.

• **Other states act**—Elsewhere, a special committee appointed by the governor of Oregon has come up with suggested changes that would cost more employers more money. It recommends increasing employer taxes by taxing the first $4,000 of an employee's annual earnings (instead of the present $3,600) and by extending coverage to employers of one person (instead of two or more).

In California, the newly formed state AFL-CIO is asking for a boost in weekly benefits from $40 to at least $65.

In Pennsylvania, on the other hand, the state Chamber of Commerce advocates tightening the law to make chiseling by claimants more difficult; it would also boost eligibility requirements.

And in Maryland, employers are facing a substantial tax increase—a boost of 350% for some—to replenish the state's recession-depleted tax reserve.

This problem is not unique. Pennsylvania, which paid out $375.3 million in benefits last year while taking in only $165.9 million in taxes, must seek legislation authorization to raise its tax rates. And Michigan has already jacked its 1959 tax up by about 2%, putting employers in the highest tax bracket permitted by present law.

OFFICIAL PROPOSALS

RATE: The rate for Official Proposal advertising is $2.40 per line or fraction set solid. Where the advertisement is set other than solid, the space is measured by total space occupied and charged on basis of 12 lines to the inch.

CLOSING DATE: Friday 10:30 A.M. for issue dated the following Thursday.

SEND COPY TO: Official Proposal Division, Engineering News-Record Class. Adv. Div., P. O. Box 12, N. Y. 36, N. Y.

Bids: January 29, 1959.

New York State Road Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of the Highway Law, Canal Law and Special provisions for projects financed with Federal Aid Funds, sealed proposals will be received until ten-thirty o'clock A.M. eastern standard time on the 29th day of January 1959, by Henry A. Cohen, Director, Bureau of Contracts, 12th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following Projects:

County	Contract No.	Name	Miles	Type	Deposit	Estimated Cost of Work
DISTRICT No. 1, G. L. Nickerson, District Engineer, 153 Broadway, Albany 1, New York						
Washington	FASSH 59-3	Morrows Corners-West Granville Proj. S-534(1)	4.50	Bit. Double Surf. Treat. Stone = 4.47 Mi.; Misc. Work = 0.03 Mi.	$33,000 Plans $5	$608,000
Albany	M 59-1	Ontario Street Bridge, Cohoes (Old Champlain Canal)	0.02	Replac. Exist Bridge with Corr. Metal Pipe Culv. and Misc. Work	$1,100 Plans $10	$27,000
District No. 4, B. F. Perry, District Engineer, Barge Canal Terminal, Rochester 1, New York						
Monroe	LOSP 59-1	Lake Ontario State Parkway Sections A and B	10.40	Landscaping	$6,000 Plans $5	$107,000
DISTRICT No. 5, E. G. H. Voltmann, District Engineer, State Office Bldg., 65 Court Street, Buffalo 2, New York						
Niagara	M 59-2	Sulphur Springs Bridge E-239 over Erie Barge Canal		Clean. and Paint. Thru Truss Bridge 148' Span	$250 Proposal Only No Plans $2	$4,500
DISTRICT No. 6, James H. Thomas, District Engineer, State Office Bldg., 30 West Main Street, Hornell, New York						
Allegany (Rte. 21)	FGRC 59-3	Andover-Alfred Station, Almond, S.H. 5502 Proj. FG-589(6)	0.52	9" Cem. Conc. Pavt.; 20' Wide R.R. Sep. Plate Girder 106.5' (1 Span)	$29,000 Plans $5	$537,000
DISTRICT No. 7, Robert W. Sweet, District Engineer, 444 Van Duzee Street, Watertown, New York						
Clinton (Int. Tour. Rte. 87)	FISH 59-2	Interstate Route 502, Sect. 7B-1 (Salmon River to Rugar St.); Plattsburg-Keeseville, Pt. 1, S.H. 56 and Access Roads Proj. I-IG-1119(20)	4.19 (3.19 Acc.) (0.58 R.R.)	Asph. Conc. = 863 Mi.; Misc. Work = 0.56 Mi.; (Acc. Rds. = 3.19 Mi.; Asph. Conc.) (R.R. Track Relocation = 0.58 Mi.); 2 Pre-cast Pre-stressed Conc. Twin Bridges Each 147.2' (3 Span) and 390.5' (6 Span); 2 Pre-Cast Pre-Stressed Conc. Hy. Sep. 246.2' (5 Span) and 293.6' (6 Span); 2 Weld. Plate Girder R.R. Sep. 375.2' (4 Span) and 213.2' (4 Span)	$280,000 Plans $10	$5,126,000
DISTRICT No. 8, Kurt G. Bauer, District Engineer, Pleasant Valley Road, Poughkeepsie, New York						
Dutchess (Rte. 216)	FGRC 59-4	Putnam County Line-Stonehouse, S.H. 1163 Proj. SG-543(4)	0.40	Bit. Double Surface Treat. R.R. Sep. Comp. Built-Up Beam 90' (1 Span)	$9,500 Plans $5	$167,000
Orange	CH 60-1-56(4) CH 218-10-58(4)	East Orange County Residency Headquarters, Newburgh	0.16	Conc. Sidewalk and Curb	$330 Plans $5	$6,000
DISTRICT No. 9, Joseph C. Frederick, District Engineer, 71 Frederick Street, Binghamton, New York						
Chenango & Delaware (Rte. 206)	FASSH 59-4 FASSH 59-5 FARC 59-2	Bainbridge-Masonville; Pt. 1B, Bainbridge-Masonville, Pt. 2, Sidney-Masonville, S.H. 1439 Proj. S-273(2); F-548(5)	6.63	Asph. Conc. Ty. 1A Comp. WF Beam Bridge 232.5' (1 Span); Pre-Cast Conc. Beam Bridge (25.5') (1 Span)	$90,000 Plans $5	$1,582,000
DISTRICT No. 10, M. E. Gotz, District Engineer, 325 W. Main Street, Babylon, L. I., New York						
Bronx (Int. Tour. Rte. 95)	FICBE 59-1	Interstate Route Connection 511, Cross Bronx Expressway (Harlem River to Jerome Ave.) Cont. 1G Proj. I-1084(41)	0.74	Demolition of Build.	$15,000 Plans $5	$270,000
Kings	FAPE 59-1	Prospect Expressway, Fort Hamilton Parkway Interchange (Greenwood Ave. to Beverly Rd.) Proj. U-1081(4)	0.54	9" Col. Cem. Conc. Pavt., 2 @ 37' Var. Wide = 0.11 Mi.; Sheet Asph. Pave. = 0.10 Mi.; Misc. Work = 0.03 Mi.; 2 Hy. Seps. Comp. Steel Beams 145.5' (2 Span) and 130.1' (2 Span); 1 Hy. Sep. Weld. Plate Cont. Girder 196.5' (2 Span); 1 Ped. Overpass Weld. Thru Plate Girder 212' (2 Span); Alterations to Subway Vents and Station	$340,000 Plans $10	$6,027,000
Nassau (Rte. 25D)	FAHHE 59-1	Horace Harding Expressway Extension (N.Y. City Line to Willis Ave.) Cont. No. 5 Proj. U-862(17)	1.31	Landscaping, Fencing and Misc. Work	$16,000 Plans $5	$313,000

Any projects in this letting that are on the Federal Aid highway systems are subject to the provisions of the "Federal-Aid Highway Act of 1956", being Public Law 627, 84th Congress, approved June 29, 1956, and are also subject to the applicable New York State statutes.

In compliance with the provisions of Section 115 (Prevailing Rate of Wage) Public Law 627, the minimum wages to be paid laborers and mechanics are included in wage schedules that are set out in the bid proposal.

Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts, Albany, N. Y., and at the office of the District Engineers noted above, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for Plans and Proposal Forms for each contract is indicated above. A refund will be made in full to bidders for return of one set, in good condition, within 30 days of award, or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Special attention of bidders is called to "Information for Bidders" in the Public Works Specifications, and to the special provisions applying to projects financed with federal funds. Award of a contract is subject to priorities and allocations under the Defense Production Act of 1950, as amended, and all regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Laws, as set forth in "Information for Bidders".

The right is reserved to reject any or all bids.

JOHN W. JOHNSON
SUPT. OF PUBLIC WORKS

Read the Official Proposal Columns of

ENGINEERING NEWS-RECORD

This Week and Every Week

OFFICIAL PROPOSALS

Bids: February 3, 1959

Allegheny County, Penna. County Department of Aviation

Pittsburgh, Pa., January 2nd, 1959. Separate and sealed proposals will be received at the Office of the County Controller of Allegheny County, Room 104 Court House, Pittsburgh, Pa., until 10:30 o'clock A.M. Eastern Standard Time, TUESDAY, February 3rd, 1959, and will be opened and read by the County Commissioners in the Gold Room, Room 410 Court House, Pittsburgh, Pa., one-half hour later, 11:00 o'clock A.M. Eastern Standard Time, for the following:

CONTRACT NO. S-J
GRADING & DRAINAGE OF EAST-WEST PARALLEL RUNWAY TAXIWAY "N" AND "Z", GRADING, DRAINAGE & PAVING OF RELOCATED MOON CLINTON ROAD—CONNECTING ROAD AND HANGAR SERVICE ROAD—
GREATER PITTSBURGH AIRPORT
CONTRACT NO. S-L
CONSTRUCTION OF UNDERPASS AT INTERSECTION OF TAXIWAY "N" AND HANGAR SERVICE ROAD
GREATER PITTSBURGH AIRPORT

The minimum wage rates permissible on this project shall be in accordance with the schedule of minimum rates set up in the Contract Documents.

No Bidder may withdraw his bid for a period of sixty (60) days after the scheduled closing time for receipt of Bids.

Specifications, Form of Contract, Instructions to Bidders, Proposals and Blue Print Copies of Letting Plans may be viewed at the Office of the Commissioners of Allegheny County.

Copies of the above data for use of Bidders will be furnished upon application to the Contract Clerk, in the County Department of Works of Allegheny County, Room 502 County Office Building, Pittsburgh, Pa.

A charge of $2.00 will be made for each set of Standard Contract Specifications.

A charge of $25.00 will be made for each set of Plans & Specifications for CONTRACT NO. S-J.

A charge of $5.00 will be made for each set of Plans and Specifications for CONTRACT NO. S-L.

There will be no refund on the Standard Contract Specifications or Plans and Specifications.

Check or Money Order to cover Specifications to be made out to the "COUNTY OF ALLEGHENY"

Proposals must be accompanied by a Certified Check or Surety Company Bond (on County's Form) to the order of or running to the County of Allegheny for the amount fixed in the Instructions to Bidders as evidence that the Bidder will accept and carry out the conditions of the Contract in case of award.

The County Commissioners reserve the right to reject any and all Bids.

JAMES W. KNOX, CONTROLLER,
COUNTY OF ALLEGHENY.

U. S. Government

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-5139) will be received at Yuma, Arizona until 10 a.m. Mountain Standard Time, February 12, 1959, for furnishing labor and materials for earthwork, pipeline, and structures, South Gila Drain No. 2, Colorado River Front Work and Levee System, Arizona. Location near Yuma, Arizona, in Yuma County. Principal items are 126,000 cu yds excavation; 11,000 lin. ft., 24-inch diameter concrete pipe; and other work. Completion time 180 days. For particulars, address Bureau of Reclamation, P.O. Bin 151, Yuma, Arizona; or Building 53, Denver Federal Center, Denver 2, Colorado. W. A. Dexheimer, Commissioner.

Sealed bids for construction (except elevators) of the Dental Research Laboratory Building, National Institutes of Health, Bethesda, Maryland, will be received until 2:00 PM, EST, February 10, 1959 in Rm. 7128, GSA Regional Office Building, 7th & D Sts., SW, Washington 25, D. C., and then publicly opened in Rm. 7128 at the above address. Contractors interested in bidding the complete project may obtain bidding material from Public Buildings Service, Rm. 1304, 19th & F Sts., N.W., Washington 25, D. C. Phone: EXecutive 3-1000, Ext. 2297. Commissioner of Public Buildings, General Services Administration.

U. S. Government

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Invitation No. DS-5138) will be received at Denver, Colorado, until February 26, 1959, for furnishing one (1) 168-inch butterfly valve with controls for Unit N8, Hoover Powerplant, Boulder Canyon Project, Arizona-California-Nevada. Delivery is desired within 540 days. For particulars, address Bureau of Reclamation, Building 53, Denver Federal Center, Denver 2, Colorado. W. A. Dexheimer, Commissioner.

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Invitation No. DS-5136) will be received at Denver, Colorado, until February 24, 1959, for furnishing one (1) 115,000 horsepower, 180-rpm, vertical shaft hydraulic turbine with pressure regulator and energy absorber for Unit N-8, Hoover Powerplant, Boulder Canyon Project, Arizona-California-Nevada. Delivery is desired within 675 days. For particulars, address Bureau of Reclamation, Building 53, Denver Federal Center, Denver, Colorado. W. A. Dexheimer, Commissioner.

CLASSIFIED ADVERTISING INDEX

Albert Pipe Supply Company 121
Ambursen Dam Company 120-121
Arrow Contractors Equipment Co 119
Associated Pipe & Fitting Co 121
Atkinson Company, Guy F 121

Baker, Jr. Inc. Michael 118
Buff 121

Conmaco, Inc. 120
Cranes Inc. 121

Davidson Pipe Supply Company 121
Drachman Steel Corp. Hy 120

Forsythe Equipment Company 120

Gillis & Company 120
Greenpoint Iron & Pipe Company 121

Harza Engineering Company 118
Havre De Grace Shipyard Inc. The 121
Hoppe, C. B. 119

Memphis Equipment Company 119
Mississippi Valley Equipment Co 120

National Blue Print Company 121

Overseas Americans Inc 117

Rochester, City of 119

Seaboard Equipment Company, Inc 120
Service Supply Corp 121
Sherman Crane Service, Inc. Roger 120
Smith Incorp. L. B. 119-120-121
Stanhope Inc. R. C. 120
Sverdrup Parcel Engineering Co 118

Tamblyn System 119

Union Building & Construction Corp 120

Warner, C. S. 118
Warren-Knight Company 121
Weiss Company, B. M. 120
Western Services Corporation 120
Whisler Equipment Company 120
Wilson Engineering Corporation 119
Winters, W. R. 121
Wisconsin, State of 118

EMPLOYMENT OPPORTUNITIES

Send NEW Ads and Inquiries to Classified Advertising Division of ENGINEERING NEWS-RECORD, P. O. Box 12, N. Y. 36.

ADDRESS BOX NO. REPLIES TO: Box No. Classified Adv. Div. of this publication. Send to office nearest you.
NEW YORK 36: P. O. BOX 12
CHICAGO 11: 520 N. Michigan Ave.
SAN FRANCISCO 4: 68 Post St.

• *POSITIONS VACANT*

Structural steel designer and estimator, industrial and miscellaneous steel structures, steel plate fabrication. Graduate engineer, 30-40, minimum 5 years design experience. Permanent employment, paid vacations, group insurance plan, good schools. Excellent opportunity. Location Mid-Continent. Reply fully, giving resume of experience, education, age and salary requirements to P-9557, Engineering News-Record.

Construction estimator-superintendent for specialized non-building general construction. Must be capable of taking complete charge of operation. Based in Phila. Salary and percentage. Write P-9546, Engineering News-Record.

Draftsman—Minimum of 5 years experience in plans for pumping stations and treatment plants for water and sewerage, projects. Salary commensurate with ability. 20 man consulting engineering firm in Central New York. Send detailed resume, references, etc., to: Donald E. Stearns, P. E., Civil and Sanitary Engineers, 99 Albany Street, Cazenovia, New York.

Experienced Sanitary Engineer—desired by well-established consulting firm. Must be capable of preparing designs, checking shop drawings, etc., for sewage treatment plants. Location, Maryland. Salary, open. All replies kept confidential. Send resume of qualifications to P-9448, Engineering News-Record.

Sewer And Water Line Superintendent experienced in South Florida or equivalent conditions. This man must have sober habits, ability and aggressiveness to take complete charge of work in the field. He should know equipment and how to work same. He must be capable of assuming general superintendent duties later on for an aggressive and medium size company. Please give complete experience record and education in first reply which will be treated confidential. P-9650, Engineering News-Record.

Engineer, 30 to 40 yrs. experienced in sewer and water line construction and treatment plants, both field and office. Must have sober habits, ability to meet people, management possibilities and the ability and aggressiveness to advance in medium size but aggressive company located in South Florida. Please give complete experience and educational record in first reply, also recent photo. P-9656, Engineering News-Record.

Wanted M.S. structural engineer to head design of indeterminute structure department in a well established firm. Permanent position, excellent living conditions, future association for properly qualified person. Location—N. C. P-9618, Engineering News-Record.

Wanted: Chief Estimator. Judicious Buyer. Graduate Civil Engineer. Proven Ability. Willing to assume responsibility. Salary and participation. Send Complete resume, salary expected. Executive Offices, Delaware Valley. P-9647, Engineering News-Record.

Estimator—General Contractor—Experienced Commercial, Industrial Buildings—Locate in Jacksonville, Florida—Send resume stating experience and salary requirements. P-9684, Engineering News-Record.

Estimator: General Construction. Must be accurate. Salary or may participate. Central Illinois. P-9685, Engineering News-Record.

Field Engineers. Recent architectural engineering graduates for a national trade association promoting masonry building materials in northeastern states. Salary to start $400.00 per month plus expenses. P-9668, Engineering News-Record.

Wanted—Structural Steel Supervisor and Estimator—Estimating and Supervising structural steel erection and welding, New York City Area. Graduate Engineer Preferred but not necessary. Reply giving brief resume of experience, Education and salary expected. P-9673, Engineering News-Record.

(Continued on opposite page)

EMPLOYMENT NATIONAL COVERAGE OPPORTUNITIES

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• POSITIONS VACANT

Construction Engineer with experience on sewers, water mains, pavements. Permanent position with liberal fringe benefits. Salary $5,486 to $7,522 depending on qualifications. Submit resume with snapshot to City Clerk, Royal Oak, Michigan.

Estimator must be experienced in all phases of construction. Top pay from expanding general contractor. Call or write Mr. A. F. Ritter, Wingate Construction Co., 31 S. 17th Street, Phila. 3, Penna. RIttenhouse 6-7100.

Construction Superintendent. Heavy construction, concrete, sewage treatment plant, incinerator, and earthmoving experience. Call or write Mr. A. F. Ritter, Wingate Construction Co., 31 S. 17th St., Phila. 3, Pa. RIttenhouse 6-7100.

The City of Fort Pierce, Florida is accepting applications for the position of Civil Engineer—Director of Public Works. Applicant must have some engineering experience and graduation from a four-year college or university with specialization in Civil Engineering or any equivalent combination of training and experience in the municipal field. Salary $8,000 per year. Contact Personnel Officer for further information.

Wanted: Concrete Paving Foreman. At least 5 years experience in highway or airport paving. Location—Ohio. P-9691, Engineering News-Record.

• POSITIONS WANTED

Const. Supt. 25 yrs experience in commercial buildings. Available now. PW-9328, Engineering News-Record.

Equipment Superintendent: Seven foreign completed contracts. Available February. PW-9583, Engineering News-Record.

Engineer & Architects—Representative S.E. or S.W. Area. P.O. Box 53-296 Miami Shores, Fla.

Field Engineer: 32. 10 years inspection & supervision: Soils, Concrete, Asphalt & Misc. Airports, Highways & Bldg. Sites. State job, location & salary. PW-9611, Engineering News-Record.

Electrical Superintendent. 25 years experience in construction of power houses, industrial plants, substations, transmission lines, and distribution lines. Will relocate. PW-9413, Engineering News-Record.

Construction Engineer 36, thirteen years experience with consultants and contractors as superintendent of construction and also project engineer. State Highways, Bridges, water and sewage works, and power plants. PW-9622, Engineering News-Record.

Field Office Man—Cost, Payroll, Paymaster, Personnel, Purchasing, Administrator — 12 yrs Experience—Mobile. PW-9621, Engineering News-Record.

Young Graduate Engineer, 28, B.S. Arch. Eng. seeks career opportunity with manufacturer or fabricator in engineering sales. Six years varied experience in construction, design, and engineering administration. P. O. Box 9065, Metairie, La.

Registered highway engineer, land surveyor, 30 years experience. Engineer or construction superintendent, highways, bridges, sewers. PW-9657, Engineering News-Record.

Contractor's Engineer — Graduate C.E. licensed in N.Y. and N.J. Heavy Construction and Buildings. Wide experience in estimating, purchasing, supervision, and project management. "Bid to Completion" experience. PW-9646, Engineering News-Record.

• POSITIONS WANTED

Proj. Mgr., Const. Supt., Spec. Writer. 30 yrs. varied CE experience. PW-9644, Engineering News-Record.

Engineers — Contractors — Laboratory — 22 years progressive heavy construction experience: Sewers, Concrete, Earthwork. Versatile, Dynamic, Practical Know-How; member ACI and ASTM. Available Jan. 15th. Contractor's Supt., Foreman, Office Mgr. Consultant's Res. Asst.-Sen. Inspector. Laboratory's field or project Manager. Resumes to all replies: locate anywhere. J. P. Wallace, 1117 Richmond Ave., Apt. 14 Houston 6, Texas. Telephone: JA. 3-9769.

Engineer—BSCE—35—Over 10 years experience in materials and soils, supervision of construction on dams, highways and tool roads. Prefers permanent position in Mid-west or West. PW-9619, Engineering News-Record.

Construction Executive. Wide experience in general contracting field as supt., construction manager. Proven record as a producer with top grade contractors. PW-9608, Engineering News-Record.

Construction Mgr. Proven capability. $15,000.00 minimum. Available immediately. PW-9618, Engineering News-Record.

Sales Engineer; B.S. Architectural Engn.— 3 yrs. structural steel detailing & estimating —3 yrs design, production & sales promotion of precast concrete products; seeks sales engineering position in south or west. PW-9602, Engineering News-Record.

Resident Engineer—Supervision of Construction large industrial projects. Presently employed overseas. Desires change of location 20 years overseas. Resume on request. Available January. PW-9577, Engineering News-Record.

Steel Erector—15 yrs. Exp. steel erection. Licensed helicopter pilot-600 hrs., airplane pilot-700 hrs. Desire position as combination pilot and field man. Box 16, Letart Falls, Ohio.

Labor Foreman or General Foreman all types buildings, 12 years experience. At present located in Michigan. Will relocate if necessary. Have completed building estimating & contracting. Also Architectural Drafting. Can handle men and get results. PW-9680, Engineering News-Record.

Civil Engineer, 37, Graduate, Registered, 12 years one contractor all phases heavy construction. Chicago preferred, available. PW-9683, Engineering News-Record.

Civ. Eng., BCE, P. E., 30; 7 years experience highway and industrial fields. Desire responsible position New York State. PW-9671, Engineering News-Record.

Equipment Superintendent for all types of earthmoving equipment. Thoroughly experienced in preventive maintenance, purchasing and labor relations. Age 35, will relocate. Excellent references. PW-9678, Engineering News-Record.

Specifications Engineer for Public Works contracts, claims, reports, evaluations, liaison. Airports, seaports, highways, bridges, tunnels, buildings. P.E. 30 yrs. exp. PW-9672, Engineering News-Record.

Registered engineer—Thoroughly experienced highway engineer—field and office. Four years project engineer—Industrial construction. PW-9687, Engineering News-Record.

Civil Engineer, B.Sc., P. Eng., 25, British, now working in Canada, desires employment in States or overseas. Three years experience includes Bridge Construction, design and construction of water and sewerage schemes. PW-9690, Engineering News-Record.

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Excellent opportunity in Missouri-Illinois-Tennessee sales territory of major chemical corporation for graduate engineer 27-35 years desiring sales, promotion and construction work in an expanding market. Highway and concrete engineering background desirable for contacts with highway departments, contractors and concrete products companies.

Permanent position with excellent opportunity for advancement. Attractive salary, company car and expenses with liberal company sponsored benefits.

SW-9637 Engineering News-Record
Class Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

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An exclusive association for foreign construction workers. Membership is a must. Current authenticated data on all foreign construction projects. Write for free details.

Overseas Americans Inc., 7 West 44 St., New York 36, N. Y. Dept. H.

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Construction Supt. Top level only. Available immediately. PW-9613, Engineering News-Record.

Construction—Project Engineer. Exceptionally broad experience in most responsible capacities, both engineering and supervision, waterworks, sanitation, sub-aqueous, tunnel, bridge and heavy construction projects. Fully familiar modern construction methods and practices. Available April for responsible assignment field supervision construction. Registered. Age 58. PW-9692, Engineering News-Record.

Estimator and Project Engineer age 32. 10 years experience in Building Construction, Highway & Heavy Const. Some dirt moving and piling experience. Resume on request. PW-9693, Engineering News-Record.

C.E. 34 yrs., Danish—1 year in U. S., Married. Seeks position as design or field engr. domestic and foreign. 6 years experience in dock, harbour and highway design and construction. Administrative background. Knowledge French, German and Spanish. 2 years in Middle East. For detailed resume write PW-9697, Engineering News-Record.

Superintendent-Estimator—Piping & Mechanical Specialist 18 Yeras Refinery, Powerhouse, Steel Mill, Etc. All Phases Estimate To Completion. Resume On Request. PW-9699, Engineering News-Record.

Executive, until recently General Manager for successful New York General Contractor, solicits inquiries from Contractors requiring top man with thorough experience, qualified to assume full responsibility. Minimum $20,000. PW-9701, Engineering News-Record.

Millwright Superintendent: Fast, Capable And Sober. PW-9700, Engineering News-Record.

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Write to: **R. F. Milhaupt**
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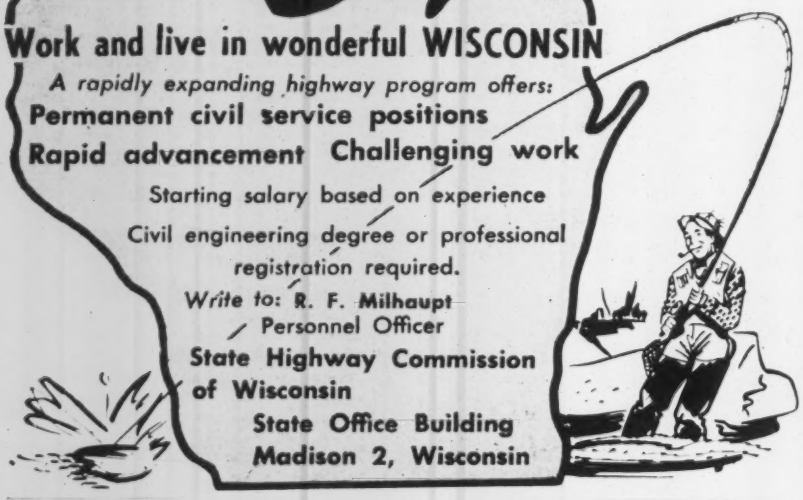
State Highway Commission of Wisconsin
State Office Building
Madison 2, Wisconsin



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To supervise construction of 122 kilometer highway in Iraq. Fifteen years experience required. Excellent salary plus furnished house free for self and family. Approximately two to two and one half years term. Please send complete resume and specify salary required.

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Challenging positions for mechanical and electric mechanical engineer with progressive manufacturer of light construction equipment machinery.

Requires sound educational background plus 3-5 years design experience in metal working industry.

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PREFER GRADUATE REGISTERED ENGINEERS WHO SEEK LONG RANGE EMPLOYMENT WITH AMPLE OPPORTUNITY FOR PROFESSIONAL DEVELOPMENT AND ADVANCEMENT IN A STEADILY EXPANDING AND GROWING ORGANIZATION.

Paid vacation, sick leave, holiday, overtime. Excellent Employee Benefits Plan provides retirement income plus life and disability insurance. Blue Cross Moving allowance.

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American Bitumuls & Asphalt Co. 44
American Foreign Insurance Association 65
American Oil Company 5
Armco Drainage & Metal Prod., Inc. ..... 2nd Cov.
Automotive & Aircraft Div. Amer. Chain & Cable 58

Bay City Shovels Inc. 4, 107
Bethlehem Steel Co. 68
Blaw Knox Co. Constru. Equip. Div. 81
Borden Metal Products Co. 20
Broderick & Bascom Rope Co. ..... 4th Cov.
Butler Manufacturing Co. 79

Cleveland Trencher Co. 94-95
James B. Clow & Sons 88
Columbia-Southern Chemical Corp. 71
Committee On Steel Pipe Research 87
Continental Motors Corp. 114

John Deere, Ind. Div. ..... 61 to 64
Douglas Fir Plywood Association 82-83
Du Pont De Nemours & Co. Explosives 29

Economy Forms Corp. 6
Euclid Div. GMC 100

L. B. Foster Co. 18

Gahigan Dredging Corp. 42
Garrett Corp. 50
General Motors Corp. Truck & Coach 104-105
B. F. Goodrich Co., Tire Div. 35
Griffin Wellpoint Corp. 74
Gunite Concrete and Construction Co. 69

Haloid Xerox, Inc. 12
Hercules Motors Corporation 93
Homelite Div., Textron, Inc. 52
Hose McCann Company, Inc. 42
Huber-Warco Co. 98-99

Ingalls Iron Works 72
Ingersoll Rand Co. 97

Keasbey & Mattison Co. 109
Kinnear Mfg. Co. 74
Koehring Co. 8-9
Kohler Co. 88

Lefax Co. 69
Lehigh Portland Cement Company 59
LeRoi Div. Westinghouse Air Brake Co. 55
R. G. LeTourneau 75
Lima Works, Construction Equip. Div., Baldwin-Lima-Hamilton Corp. 86
Lipe Rollway Corp. 33
Lock Joint Pipe Co. 16
Lukens Steel Company 43

Mack Trucks, Inc. 36-37
Macwhyte Company 45
R. C. Mahon Co. 46-47
Massey-Ferguson Industrial Div. ..... 3rd cover
W. R. Meadows, Inc. 14-15

National Supply Co. 66
Naylor Pipe Company 103
Noble Co. 111

Page Fence Association, Amer. Chain & Cable 53
Patent Scaffolding Co. 67
Pioneer Engineering 7

Ramset Fasteners, Inc. 54
Richmond Screw Anchor Co. 2

Sauerman Bros., Inc. 84
Socony Mobil Oil Co., Inc. 13
Solvay Process Div. 80
Spencer, White & Prentis, Inc. 92
John W. Stang Corp. 69
Stanpat Co. 10
Statistical Tabulating Corp. .....
Superior Lidgerwood-Mundy Corp. 92

Tectum Corp. 76-77
Thiokol Chemical Corp. 11
E. A. Thompson, Inc. 34

Universal Form Clamp Co. 89
Universal Sewer Pipe Corp. 3

Warren-Knight Co. 6
Weil Pump Co. 113
Westinghouse Electric Corp. Apparatus 90-91

Professional Services **122**

CLASSIFIED ADVERTISING
F. J. Eberle, Business Mgr.

Employment Opportunities 116-118
Notices
Proposals 114-116
Equipment
(Used or Surplus)
(For Rent, Sales Wanted) 119-121

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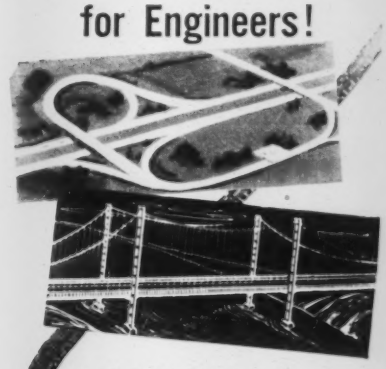

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End Building Code Confusion

MUCH TIME, MONEY AND EFFORT must have gone into the development of the Modern Standard Building Code just issued by the Midwest Conference of Building Officials. And since they undoubtedly took advantage of the experiences of the three other major building-officials organizations, who also sponsor model codes, as well as skimming the best from several other well known model codes, a useful, meritorious document has been produced.

Nevertheless, promulgation of this code will probably do more harm than good. Communities throughout the U. S. were confused by the number of existing model codes even before the new one was completed. At the recent conference on a proposed American Standard Code for small houses, for example, representatives of the general public called for adoption of a standard to eliminate this confusion, in the hope thereby of reducing construction costs (ENR Sept. 18, p. 24). At this conference also, three building-officials organizations objected to the proposed standard, contending that it would be just another model code; also that an increase in the number of model codes would be undesirable. These objections were a major factor in the American Standards Association's refusal to initiate development of the proposed standard (ENR Nov. 27, p. 17).

If the multiplicity of building codes was undesirable before, this new model code now adds to the confusion, tends to make current code conflicts more difficult to untangle and hampers efforts to unify existing model codes. Certainly, it won't make easier the work of the Joint Committee on Unification of Building Codes.

There appears to be only one answer to the problems raised by the trend toward formation of more associations of building officials, who write more and more model codes: Merge the many groups into one, which will then sponsor only one model code. Let's end building code confusion.

Good Decision

CALIFORNIA'S NEW GOVERNOR—Edmund G. Brown—has made a wise and courageous choice in retaining Harvey O. Banks as director of California's Department of Water Resources. An engineer of proven ability, Mr. Banks became director two years ago when the department was established to meet a need that would make it the country's largest non-federal water resource construction agency.

That the department is still far from that status is not surprising considering the political and economic obstacles to be overcome. Nevertheless, enough design progress has been made to permit the start of many significant works. These starts might have been further delayed if there had been a change in leadership. And meanwhile California's water deficiencies would have become more acute.

Despite the recognized difficulties and the progress that has been made in the face of them, criticism has not, of course, been absent. It is, therefore, even more significant that, following perhaps the greatest political upheaval in California history, no change is being made in the top of such an important construction agency. This is a tribute to Mr. Banks' engineering skill. But even more importantly, it is a tribute to his grasp of the political and economic issues. This has permitted him to make some progress without alienating the very vocal and militant factions involved.

All of this is not to say that California's water problems will now be solved with ease. They may not be completely solved for decades. But there is now a good chance for real progress without the setbacks that might have resulted from a major administrative change.

Enter, the Design Critic

SUPPOSING, side by side with the critical reviews of movies, plays, TV shows and books in your favorite newspaper or general magazine there should also be a review of the new XYZ Building, the Up-and-Over Expressway or the Clear-Away Development Plan? Could designers take the criticism that play producers do? If so, would designers benefit? More important, would such criticism tend to sharpen the public's thinking, and thus raise the general level of appreciation of works of architecture and engineering?

There are those who think that a body of design critics would be a useful addition to the human race, and they have persuaded the Rockefeller Foundation to give the University of Pennsylvania School of Fine Arts $36,000 to study the matter. The results should be interesting.

Actually, newspapers and magazines could shortcut this procedure considerably by hiring a design critic and putting him to work. And precedent for such a course has already been set by THE NEW YORKER magazine in whose pages Lewis Mumford has critically discussed urban developments for many years. The problem is, of course, that the woods is not full of critics as knowledgable, discerning and articulate as Mr. Mumford.

To the lack of capable critics, one must also add the unknown reaction of engineers and architects to criticism of their work as another aspect of the problem. Their favorable acceptance of the idea of criticism, although not absolutely essential, would help immeasurably. The real worth in the idea, however, is the possibility that the general public could be stimulated to think more constructively about the looks and the efficiency of our cities. The results of the Rockefeller Foundation-supported study can perhaps throw some new light on this significant aspect of the question.

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